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Volume 24 **SEPTEMBER-OCTOBER** **Number 5**

Physical Therapy and Science

Lewis J. Pollock, M.D.

At this, your commencement, may I congratulate you upon fulfilling such requirements of teaching as may qualify you to begin or commence the application of some procedures designed to assist physicians in healing the sick.

At the same time I must point out to you that from this beginning until the ultimate fruition of the development of physical therapy from an art to a science, a long and arduous path is ahead for you and those who are concerned with the advancement of physical therapy.

At first the origin of treatment by medicinal agents or drugs differed in no wise from that of physical therapy. At first among primitive people, the medicaments were inextricably combined with mysticism and religion. The efficacy of suggestion and faith is reflected even in our time by Doweism and Eddyism.

Later primitive people recognized the virtues of herbs like opium, hashish, hemp, coca, cinchona, sarsaparilla, copaiba, jalap, podophyllin, and so on. Many substances were designated as specific for certain disorders. Among the American Indian, arbutus was held to be good for rheumatism, Lobelia for coughs and colds, prickly ash berries for fever. Similarly in the later development of not too old pharmacopoeias may be found many drugs held to be specific for certain diseases. When by a trial and error method the administration of a drug is followed by cure of a disorder, it often may be falsely reasoned that the drug cured the disorder. Such illogical reasoning gives rise to credulity and gullibility which encourage the development of mountebanks and quacks. Such were the Taylor brothers in England, a century ago. They were two village farriers who took up human ailments, buying Glauber's salts by the ton, and dispensing it in proportion, bleeding the poor, free of charge on Sunday mornings, setting broken bones, and treating cancers.

As the result of the joint labors of the chemist, the pharmacologist and the physician, many substances formerly in high repute as therapeutic agents are now no longer used.

Drugs and chemical substances intended for therapeutic use are now subjected to careful chemical analysis and exposed to physiological test. Even now the false assumption that if a cure follows the administration of a drug, it is a specific, often leads to false hopes and disappointment.

In the evaluation of the efficacy of physical agents in the treatment of disorders, due consideration must be given to observation of controls. It may well follow that a peripheral nerve recovers after injury when the paralyzed muscles are treated by electrotherapy or that a not too severe paralysis remains after anterior poliomyelitis when the disordered muscle is treated by hot packs. But who can say that both conditions would not have developed without any treatment or perhaps be even better without treatment? During the relatively milder epidemics following

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Read before the graduating class of Physical Therapists, Northwestern University Medical School, Chicago, June 28, 1944.

the severe ones of 1906 and 1916 of infantile paralysis, the efficacy of immune serum in preventing residual paralysis was well assured. Yet when one remembers that on the island of Nauru, familiar to you now because of our military activities on the islands of which this is one, there was an epidemic of infantile paralysis and, without the use of serum or anything else, there was hardly a case of residual paralysis. Then when in Philadelphia a control experiment was conducted wherein only every other patient was treated by immune serum, the untreated ones had a fewer number of residual paralyses.

An excellent example of the usefulness of control methods may be found in the story of Elisha Perkins. Late in the eighteenth century he was graduated from Yale College. He took up medicine, but in 1798 he developed a device that did away, so it seemed, with all further need for physicians. He invented the Perkins tractor which consisted of a compass-like device of two rods — one sharp-pointed and the other blunt. They were made of combinations of different kinds of metal, copper and zinc, gold and iron, or platinum and silver. The tractor was stroked over the skin and the pain disappeared. Now in 1786, Mme. Galvani, the wife of the distinguished Luigi Galvani, called his attention to an observation that when a frog's leg suspended by an iron spike was blown against a decorative metal the leg twitched. From this observation Galvani developed his theory of animal electricity and shortly after Volta, recognizing the actual meaning of this observation, constructed a battery. Thus there was a verisimilitude of science to support the idea that the contact of two dissimilar metals to tissue produces electricity. Electricity was the subject of much popularity and much speculation, and the people were willing to credit miracles to this mystery.

Its followers were ecstatic in their belief as shown in the following poem which was read by Fessenden on the opening of a free clinic:

"See, *pointed metals*, blest with power t'appease
The ruthless rage of merciless disease,
O'er the frail part a subtle fluid pour,
Drenched with invisible Galvanic shower
Till the arthritic staff and crutch forego,
And leap exalting like the bounding roe!"

The fad spread to Europe, and an Institute of Perkinsism was erected in London.

However, John Haygarth made a pair of tractors out of wood and painted them to resemble metal. He also employed tractors made of lead, nails, pieces of bone, slate pencils and the stems of tobacco pipes. Experiments were conducted with these at the Bath Hospital and in the infirmary at Bristol, all with successful results. The case reports in Haygarth's pamphlet admitted of no contradiction, and professional and public confidence rapidly dwindled.

In the evaluation of the efficacy of therapeutic agents due consideration must be given to the influence of suggestion and faith. The belief in the wearing of amulets attests to this. Not only do we find examples of such fallacies among primitive people but throughout history. Thus the following remedy for fever and ague was recommended by Sir Kenelm Digby: "Pare the patient's nails; put the parings in a little bag, and hang the bag around the neck of a live eel, and place him in a tub of water. The eel will die, the patient will recover." It is not so long ago that magnetic soles and belts were sold for the relief of everything from corns to baldness.

A good example of the mixture of faith with pseudoscience was the revival of Kircher's hypnotic idea under the guise of "animal magnetism" by Franz Mesmer. Experimenting with a magnet he conceived the idea that a similar power is possessed by the human hand. After some troubles he attained considerable success and made a great deal of money by his hypnotic seances. In these he appeared clad in a lilac suit playing on a harmonica, touching his patients with a wand, staring into their eyes, and attending them in a private chamber in case of a "crisis." A prominent feature of the mesmeric treatment was a number of so-called magnetic tubs, or baquets, containing a *mixtum compositum* of hydrogen sulphide and other ingredients, and provided with iron conductors from which depended a ring for purposes of contact with the patients who stood around the tubs, joining hands.

Although dishonest exploitation by the manufacturer of apparatus or its use is now rare indeed, one must always keep in mind that such armamentarium often contributes to successful suggestion on the patient. This is, of course, well known to the charlatan who surrounds himself with mysterious-appearing apparatus and equipment. This was successfully employed by James Graham of Edinburgh, who was the coryphaeus of "celestial beds" for regenerating senility. He was a man of handsome physique, aquiline features, and pontifical manner, who had half-studied medicine and picked up some knowledge of electricity from hearing about Franklin's experiments in America. His "Temple of Health" consisted of a sumptuously appointed apartment with all the implications and accessories of a strictly oriental interior, including mysterious perfumes, soft music, and Bacchantic poses, as

well as the magnetic bed.

Time affording facilities for critical analysis, statistical treatment and sound judgment often is the test of efficacy of therapeutic methods.

In looking over a chapter on "Electrotherapy" in Shoemaker's "Materia Medica and Therapeutics" of 1897, I found that it was recommended for neuralgia, asthenopia, exophthalmic goitre, restoration of sense of smell or taste, skin affections, chorea, dysmenorrhea, muscular rheumatism, lumbago, stiff neck, tic doloreaux, hystero-epilepsy, locomotor ataxia, anemia of the optic disc, tinnitus aurium, deafness, hemiplegia, monoplegia, multiple neuritis, paralysis of laryngeal muscles, spasms and contractures, blepharospasm, convulsive tic, epilepsy, writer's cramp, athetosis, constipation, enlarged prostate, endometritis, uterine hemorrhage, leucorrhea, sterility, uterine myomata, carcinomata, amenorrhea, threatened abortion, placenta previa, agalactia, paralysis of the bladder, incontinence of urine, impotence and spermatorrhea.

I ennumerate these to illustrate how in a few years clinical experience has shown that electrotherapy is useful for the treatment of but very few disorders, mainly those of the lower motoneuron and even this is not scientifically proven.

It is suggested from these historical anecdotes that it is desirable to recognize the limitations of methods of physical treatment; that we must critically view the results; that we should avoid an excess of zeal which leads to unreasoning thought, and that mysticism be separated from practice.

The numbers of species, other than man, which live on this earth exceed by far that of man. Since one of the principles of nature is survival of a species, it is to be expected that nature has provided for measures to minimize disease and hasten recovery in animals other than man. Although many herbs are available to animals, and often used, the greater reliance for well-being is placed on the physical agents, such as sun, diet, bathing, exercise, even massage and rest. It is natural to suppose then that these agents are of the utmost importance in the prevention and treatment of disorders in man. Although their importance was well recognized and employed from time immemorial, the physiological effects of them is not completely known and, now as before, the methods are used empirically. The focusing of the interest of science on these methods will, it is expected, soon lead to more accurate knowledge. To hasten this, it is necessary that all who practice the art of physical therapy consider it as a part of a scientific study. To be able to do so, it is incumbent on you to continue to familiarize yourselves with the armamentarium used, with the principles of physics employed by them, with the art of careful observation and measurement, and intelligent understanding of the purpose of the method and the forces used, and learn more and more of the disorders leading to indications for physical therapy, and finally to learn to treat the patient and not the disease.

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Reconditioning in Military Medicine

Colonel Augustus Thorndike, M. C.

With each great war, particularly since those days of Florence Nightingale, new methods and new technics for the care of the sick and wounded have developed. Notable among these developments from the war of 1914-1918 was the recognition of the importance of physical therapy. In that period immediately following that war a sudden interest became paramount in the care of the convalescent wounded soldier. The late Brig. Gen. William S. Thayer, Medical Consultant to the A.E.F., prophesied that this interest would fade, only to be revived late in the progress of the next war. How true such a prophesy has proven to be! This time, however, the War Department has seen fit to establish a well balanced program of reconditioning. Webster's Dictionary gives us the definition of the verb "recondition" as follows: "To restore (something worn) to sound condition by readjustments and replacement of parts; to renovate; to condition again; to reeducate (individuals); to change (emotional attitudes, habits, etc.)." The War Department has placed the responsibility for the reconditioning of patient soldiers properly in the Medical Department. The term "reconditioning" has been selected advisedly and is not to be confused with "rehabilitation," the latter being not a function of the Army but by law the function of the Veterans Administration. Much confusion exists in the mind of the public concerning the broad and sometimes mistaken use of the word "rehabilitation." The Army interest is paramount in determining that, once the soldier patient has received the maximum benefit of hospitalization, he is either discharged a soldier to duty or a veteran to the care and guidance of the Veterans Administration. It is vitally interested in the problems of effective methods of rehabilitating its sick and wounded veterans. Therefore, it may be emphasized that reconditioning pertains to soldier patients and is the responsibility of the Army Medical Department, and that rehabilitation pertains to soldiers discharged as veterans to civilian status and is the responsibility of the Veterans Administration.

It is constantly brought to our attention that the well-balanced program of reconditioning in Army Service Force hospitals is little known outside of the Army. It is proper, therefore, to explain in some detail the plan now in operation.

Reconditioning of soldier patients one considers from three aspects. The first, and all important, concerns itself with the restoration of physical fitness; the second, with mental fitness; and the third, supplementing the first two, with occupational therapy. With the new technics of teaching, the drab program of calisthenics has been made of effective interest to the convalescent soldier by adding combatives, obstacle course running and much ground contact exercise. With new sources of material the educational program not only offers abundant opportunity for the patient to complete courses of study in high school or college interrupted by his induction into military service but also adds orientation and information concerning the war on all fronts and patient discussion groups within the wards of the hospital on matters of current interest. Never shall I forget attending such a panel discussion on whether the press, the radio or the motion picture had the greatest influence on public opinion. Occupational therapy utilizing the most modern conception is prescribed by the medical ward officer for the express purpose of exercising while in gainful pursuit, stiffened or injured nerves, muscles, tendons and joints. The variety of objects and the materials worked with in occupational therapy today is varied and great, and is skillfully adapted to the special needs of each individual illness, injury or wound.

In addition to these three phases of reconditioning another and important fourth phase is provided—notably, diversional and recreational activity. This activity is carried on under the

Director of Reconditioning Division, Office of the Surgeon General, Washington, D. C.

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guidance of the Special Service Officer and the Red Cross. All four activities are coordinated into a balanced schedule week by week. The soldier patient no longer wastes time in idle fancy or dream, in boredom staring at the ceiling, counting the cracks, nails or knots in the wood. Rather he is usefully occupying his body and mind in exercises and tasks aimed to restore him quickly to a state of health. Time in hospital is profitably spent. Idleness of mind and body no longer exists! The patient likes it!

The mission, therefore, of reconditioning the soldier patient is to restore him to health as rapidly as medical judgment and individual disability will permit. Furthermore, it will return soldiers to duty or to civilian life better physically fit, better educated, oriented and informed, in fact, a better soldier. It is a pleasure to report that results to date are most encouraging.

Physical Therapy in the Veterans Administration Program

Alice Baker

Physical therapy in the Veterans Administration is an essential part in an integrated program of medical rehabilitation of disabled exmembers of the armed forces. The efforts of the internist and surgeon are supplemented by physical medicine, occupational therapy, physical exercise, recreational and library activities. The phases of physical therapy, employed in the general medical, tuberculosis and neuropsychiatric hospitals of the Veterans Administration, which are of particular concern to this assembly, will be outlined.

The physical therapy taken over from the Publice Health Service in 1922 gradually has been modified and developed to accord with the disorders of the aging men of World War I. Conversion to treatments required for these younger men and women from the present conflict now entering the hospitals is moving forward according to plan. This adjustment comprises physical therapy war courses for the physicians in charge of these departments; additional technicians and physical directors; increased space and equipment, particularly muscle training apparatus; and instructions for the treatment of war injuries.

The physical therapy department is separate from other medical specialties, serving all units of the hospital. The personnel is headed by a physician who in the larger facilities is designated as a "reconstruction officer," and he is also in charge of occupational therapy, physical exercise and recreational activities. The patient is referred to the department by his ward physician or by the head of one of the special medical services; the physician in charge of physical therapy reviews the prescription and, after examining the patient, makes the final decision in regard to treatment; he issues instructions to the chief physical therapy technician regarding the details. Progress of the patient is supervised by the physicians concerned.

The ward surgeon, under the supervision of the chief of the service, clinical director or chief medical officer prescribes and supervises all necessary treatments to patients and no exception is made to this policy in prescribing physical therapy. Occupational therapy, exercise, recreational and library activities are coordinated with physical therapy treatment in accordance with the stage of recovery. The ward physician supervises all of these projects to insure the correct appli-

Physical Therapy Supervisor, Veterans Administration, Washington, D. C.

Read before annual meeting of American Physiotherapy Association, New York City, May 17-21, 1944.

cation of all methods and physical agents used and to hold proper balance between activity and rest.

It is the policy to provide opportunities for hospitalized patients to consult with a vocational advisor, and they are assisted and encouraged by the librarian in reading which will be helpful in the selected training or education to be pursued after discharge from the hospital. Occupational therapy also offers projects of a type which are helpful to the hospital and daily living and will be of assistance to them in making adjustments in their return to normal civilian duties by emphasizing useful occupations. Participation in this program aids in establishing a work tolerance.

The 96 physical therapy departments of the Veterans Administration, maintained in 94 hospitals and 2 regional offices, are equipped to employ every physical agent which may be of value in combating disease, relieving suffering and shortening disability. Treatments are administered at the bedside, in the electrotherapy, hydrotherapy, exercise, tub and pack rooms, swimming pool and solaria. Artificial fever and shock therapy are used as required.

In the 50 general medical and surgical hospitals the usual physical therapy department consists of a large general treatment room equipped with electrotherapy apparatus, ultraviolet and thermotherapy lamps and a hydrotherapy section with arm and leg whirlpool baths, control table and shower installations and electric light bath cabinets. The extent of the space and amount of equipment, of course, is in proportion to the number of patients hospitalized. There are several variations to this basic plan. For instance, a Florida hospital has a beach house and windbreak near the water which affords ideal conditions for sun treatment and exercise on the beach and in the water. Mineral baths and packs are available to Veterans Administration patients at a spa located at Saratoga Springs, New York, which is maintained for those who require this particular treatment. As would be expected massage and exercise are also an important part of the treatment at this station. In addition to the tubs for the mineral baths, there are steam rooms, cabinet baths, control table and shower. Several of the larger stations in cold climates have solariums with carbon arc lamp installations.

The department in the 14 tuberculosis facilities varies from the general medical service in that there is no hydrotherapy room and provision is made for more extensive use of ultraviolet ray therapy. This is done by furnishing a greater number of ultraviolet ray lamps and solaria both indoors and out. When the patient's condition is such that graduated walking exercises are indicated, they are taken strictly by the watch at a slow pace. Pulse, elevation of temperature and returning cough or other symptoms are checked by the ward physician. Exercise is taken in the morning and in the afternoon. The walk is supervised and is continuous to the limit of time prescribed and not interrupted or taken by instalments.

There are 30 hospitals maintained for the treatment of those afflicted with neuropsychiatric disorders. Although these patients require treatment for many ailments and the usual physical therapy department and equipment are provided, hydrotherapy is the principal measure used. There is a main physical therapy section in the continued treatment building and small units as well as tub and pack rooms are available either in each acute building or in an accessible connected ward. There are from 3 to 8 physical therapy treatment rooms in each neuropsychiatric hospital, depending upon the patient load. Continuous baths and packs are available for disturbed patients for 24 hours a day. The physical therapy treatments necessarily overlap and correlate with the programs of the other adjunct treatments which carry on intensive programs in exercise, occupational therapy, recreation and library activities. Group therapy is conducted for those mentally ill patients whose condition unfits them for indivdual assignment to an occupational therapy project.

In the regional offices beneficiaries may receive physical therapy along with other medical treatment as outpatients. There are 2 departments in separate regional offices and 42 offices in general medical hospitals which are designated as combined facilities. In the 11 stations which have domiciliary barracks about one-third of the total number of physical therapy treatments are administered to home members who report to the outpatient clinic for medical attention. Thus the hospital beds are reserved for patients who require hospital care. At present about 12 per cent of the total number treated are outpatients.

Under the physician in charge of physical therapy there is a chief physical therapy technician who sees to it that the treatment orders are properly carried out, supervises and, if necessary, instructs the staff and junior technicians and, in the neuropsychiatric hospitals, the physical therapy attendants. The physical therapy clinical record becomes a permanent part of the patient's folder. The junior technicians work

only under the supervision of a chief or staff technician; the physical therapy attendants are employed to assist the technicians and patients during treatments and to escort patients to the department and return them to the wards. They do not administer treatments but they assist and safeguard the patients for the most part in the tub and pack rooms.

During the emergency the Veterans Administration, like others who require the services of physical therapy technicians, is experiencing difficulty in filling new positions and in securing replacements for those who have left either to enter military service, to retire or to accept other employment. Fifty-four have entered the armed forces and 2 have returned to their former positions. The Administration is presently interested in receiving applications from qualified physical therapists.

Of the total number of patients hospitalized who receive physical therapy treatments the percentage for each type of hospital is approximately:

General Medical and Surgical	20%
Tuberculosis	19%
Neuropsychiatric	14%

For the immediate future, equipment and space are adequate. There are now about 320 authorized physical therapy positions for about 62,000 hospital beds. When full bed utilization is reached about 50 additional physical therapy technicians will be required to adequately render the assistance which is expected of physical therapy in the treatment program provided by the Veterans Administration for exservice men and women.

William Gilbert, The Father of Electrotherapy

By Frank Hammond Krusen, M.D.

The famed physician, William Gilbert, whose painstaking researches have meant so much in the development of electrotherapy, was born in Colchester, Essex County, England, in the year 1540.

Gilbert came from a good family, with a high reputation in their own community. They were, apparently, of settled ways, and did not travel far from their ancestral home. Nothing of unusual character can be found concerning Gilbert's early life and education, which was seemingly tranquil and uneventful.

In 1573 he settled in practice in London. He was well known outside his profession for he attended many celebrated people and was physician to Queen Elizabeth. Gilbert spent many hours during his years in London in the painstaking researches which were to bring him undying fame. After eighteen years of labor, he finally published his great book "De Magnete." For 20 years, he experimented and speculated on magnetism and frictional electricity.

Let us see if we can reconstruct a picture of him at this time. We can probably see him at the work he loved best. A man "of stature tall and of cheerful countenance," with close-cropped beard and mustache, with determined mouth and alert eye, well dressed, for he was "a man of means," in the fashion of his time, with large, flowing sleeves, full breeches, brocaded waistcoat and the large, ungainly ruff of the Elizabethan era about his neck. In order to work in comfort, let us hope that he has laid aside some of his cumbersome attire. He is now in his work room, surrounded by globes, magnets of all sizes and shapes, diverse minerals, precious gems; pieces of amber, wax and jet are lying on a table before him. Various instruments and books surround him as he bends over his work. He is comparing the attraction power of loadstone and rubbed amber. He carefully weighs both loadstones and pieces of amber. Next he weighs tiny bits of straw and larger pieces of steel. He then makes his experiments. Finally, he carefully records his results, which are about to appear in his famed opus.

—From Archives of Physical Therapy, December 1931.

The British Rehabilitation Plan

Colonel F. S. Gillespie

Introduction

This paper will discuss briefly the problem of rehabilitation in general terms as it affects Britain as a whole rather than on the special facilities arranged for members of the armed services. The disabled service man is handled by his own service arrangements if he is going to be restored to a condition of physical fitness which will enable him to carry on his duties in the service. However, if his disability is so great as to preclude his retention in the service he is discharged from the service and his future treatment, rehabilitation, revocation and resettlement becomes the responsibility of the Ministry of Pensions and Ministry of Labor and National Service.

Although occupational therapy was used extensively in Britain during the last War, it subsequently was developed much more fully in the United States and Canada and no very great use appears to have been made of it once the problems of World War I had been more or less cleared up. In 1936, however, a British Association of Occupational Therapists was formed and in the same year a Government Committee, known as the Delevingne Committee, was formed to inquire into the rehabilitation of persons injured in accidents and to make suggestions for improving existing arrangements. This committee brought out its report and suggestions in 1939 and put forward a strong case for an organized fracture service to cover the whole country. The Committee was of the opinion that once such a scheme was organized it could be developed until it covered all persons suffering from miscellaneous injuries.

With the outbreak of War the Emergency Hospital Service came into being and it soon became clear that the existing rehabilitation arrangements were quite inadequate.

The Emergency Hospital Service was originally designed as a Casualty Service to handle air raid and other casualties but it soon outstripped its original purpose and set out to meet all needs as they arose, setting up a variety of specialists treatments in selected centers. Especially it endeavored to translate into action the main points of the Delevingne Committee with the result that various centers were set up.

(1) *Orthopedic centers* with a highly developed service covering all aspects of fracture treatment from the initial resetting through all modern stages of physical therapy and remedial exercises to complete occupational therapy.

(2) *Fracture departments (A)* without all the extremely specialized provisions for the more difficult cases such as would be handled in Orthopedic Centers.

(3) *Fracture departments (B).* Mainly hospitals not suitable for inclusion in the previous category but suitable for short stay and walking cases.

(4) *Fracture clinics* to fill in gaps in areas not covered by convenient hospitals.

In these clinics, as at the hospitals, patients can take part in rehabilitation activities after discharge from hospital and convenient to their homes.

The establishment of the Orthopedic Centers stimulated those working in them to tackle the problem of rehabilitation and in some of them rehabilitation annexes were formed to handle it, and organized training was carried out.

Occupational therapy also has been started with departments staffed by technicians in the various handicrafts. The satisfactory coordination of occupational therapy and physical therapy has been found the greatest value in Service cases, many of whom were so severely injured that more energetic treatment was out of the question. To

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Late R. A. M. C.
British Medical Liaison Officer with the United States Army.
Medical Field Service School, Carlisle, Pa.
Read before the American Physiotherapy Association Conference, New York City, May 17-21, 1944.

such patients this form of treatment serves as useful preliminary to subsequent occupational therapy.

In October 1941, an interim report on a wider rehabilitation scheme was announced which placed the matter on a broader footing and offered what was at least a temporary solution to the wider psychological and sociological problems of restoring the disabled person to his maximum working efficiency. It provided for special courses of training for:

(1) Occupation in munitions work, courses which were similar to those for the able-bodied but modified for the disabled.

(2) Other occupations specially authorized by the scheme. For these, training takes place at specially organized Government Training Centers with special experience of training for industrial employment.

Maximum length of courses is expected to be 26 weeks and disabled persons get paid during training, receive a dinner meal or allowance in lieu and daily travel allowance when necessary.

Such trades as the following are taught: bricklaying, commercial work, mechanics, machine operating, surgical appliance making, switchboard operating, watch repairing, gardening, riveting, welding, canteen management, glass blowing, glazing, dental mechanics, hair dressing, plumbing, wood machining and metallurgical analysis. Thus wide range of tastes is catered to.

Another Government committee, the Tomlinson Committee (1943), has been dealing with the problems principally from a postwar angle but has been trying to correlate this work with the 1941 interim report just described and it adopted the view that the rehabilitation of a disabled person is not merely a medical problem but is also a social and industrial problem. It advocated, therefore, the fullest possible development of hospital services and rehabilitation in the medical sense, and in addition it advocates special measures:

(1) To bridge the gap between discharge from hospital and readiness for full time activity in employment, and

(2) To overcome the prejudice against the employment of disabled persons.

The task is an immense one and calls for the setting up and equipping of a whole range of new departments and the winning of medical interest in remedial and occupational therapy for general surgical and medical cases in addition to cases suffering from injuries.

Since the supply of persons qualified in this vital service is limited, they recommend that universities and the Royal Colleges of Physicians and Surgeons should institute diplomas in these subjects so as to attract suitable teachers.

The main proposals of this report were then incorporated in a bill called the Disabled Persons Employment Bill, which recently has been discussed in Parliament. The final results are not yet available. Its provisions embrace a wide group. It provides for vocational training and industrial rehabilitation of all disabled persons, the object of such rehabilitation being to fit a person for employment which he (or she) can obtain and keep in normal competition with his fellow workers and when possible restore him to the position he once occupied.

The bill is designed to help *all* disabled, not only those who have been disabled in armed forces but any man or woman over 16 who has suffered from any disease, injury, neurosis or deformity, congenital or otherwise, which substantially handicaps him or her from obtaining employment, provided the disablement is likely to continue for at least six months. The provisions of the bill come under three heads:

(1) Courses of industrial rehabilitation and vocational training of a kind suited to the person's age, experience and qualifications. Payments during training and living expenses if necessary.

(2) A statutory obligation on employers of more than 25 workers to employ a quota of disabled persons.

Special provisions also are made for the reinstatement rights of persons who have been called up for service in the armed forces.

(3) Special facilities will be created for dealing with the minority whose disabilities permanently prevent them from entering ordinary employment.

That covers briefly the general and legal aspects of the problem and the therapeutic angle now will be outlined.

The various forms of therapy fall into two broad categories: physical therapy and remedial exercises, the latter covering gymnastics, occupational therapy and recreational therapy.

A typical rehabilitation department of an Emergency Medical Service Hospital of over 300 beds provides:

(1) A building 144 ft. by 24 ft. for massage, electrotherapy, radiotherapy, thermotherapy (including in some a short-wave

therapy), and for the earlier stages of remedial exercises.

(2) A gymnasium 60 ft. by 24 ft. for more advanced local and general rehabilitation gymnastics.

(3) A room or rooms for carpentry;

while every orthopedic center and hospital with a Group (A) Fracture Department has in addition an occupational therapy department.

REMEDIAL EXERCISES AND PHYSICAL THERAPY

Although these have been recognized for a long time as the basis for functional recovery in fractures and other injuries of the locomotor system, and although they play a vital part in the recovery of the patient, their organization and supervision frequently have been poorly organized and supervised. An important handbook is now in course of preparation which outlines the special remedial exercises suitable for each type of disability and for each grade of recovery.

OCCUPATIONAL THERAPY

Special courses are being held to train teachers of occupational therapy for civilian needs and in the Army. Specialist training has been in existence for some considerable time in the Army. A variety of main crafts, such as carpentry, metal work, basket work and various subsidiary crafts such as leather work, weaving, were taught to masseurs and masseuses who already had the necessary knowledge of anatomy, physiology and mechanics of movement. These crafts and certain games were taught, and when they had been mastered the students had to learn how to instruct patients at the Center, where the training had been inaugurated. This part of the work calls for a good deal of initiative and some knowledge of the psychology of the patients. The right apparatus has to be selected and adapted to the patient's requirements.

The difficult or uncooperative patient has to be specially studied. Sometimes the personal element has to be studied to evoke the best response, but as far as possible the social value of the work is stressed.

The student at such a center does a six month course and then goes on to a Military Hospital or a Red Cross Home either in Britain or overseas where he organizes and manages an occupational therapy department. Some are working in Prisoner of War Hospitals.

In addition, some of the students visit large factories and training centers for disabled so that they may link their work with the latest step of rehabilitation.

The Ministry of Health has made some arrangements to assist in the training of a rehabilitation staff and to familiarize officers with modern technic.

(1) Week-end courses for physicians at selected rehabilitation centers where lectures and demonstrations are arranged to illustrate rehabilitation methods in their application to various types of medical and surgical disability.

(2) Fortnightly courses for masseuses also are held at some centers so that they may observe and take part in group exercises and remedial games used in rehabilitation.

(3) Six months training courses in occupational therapy are being provided for masseuses, handicraft teachers and others possessing the necessary educational background and prepared to take up work in hospitals.

Similar courses are arranged for assistants who have not had previous training.

THE REHABILITATION OF NEUROSIS CASES

The problem of dealing with these cases is a very real one and the importance of dealing with the more tangible physical disabilities tends somewhat to overshadow the less dramatic neuroses; there are, too, the cases where you have both a physical and a mental disability to combat.

Rehabilitation in its full sense has been the object of psychiatry for years, and psychiatrists have an important role at treatment centers other than neurosis centers.

The need to provide incentives to get well and the need to change the attitude of patients towards their illness as well as providing occupation and physical training was recognized early in the war in the neurosis centers of the Emergency Medical Services. As many of the patients are *sent* for treatment, instead of applying for it, the attitude of the patient frequently is passive, sometimes suspicious and occasionally resentful.

Neurotic mechanisms operate against cooperation with the hospital when such cooperation stands for return to Service or to the situation in which he broke down.

Patients must be made to feel that the hospital is not just a machine to get them back to the front. On the one hand it must meet the needs of the individual; on the other, the needs of society. To force this issue, neurosis centers are placed near cities liable to bombing; though there is no immediate danger there is a constant sense of urgency and the hospital is organized to preserve this with fire fighting squads, and litter bearing

teams are organized in which patients are trained to work in spite of their symptoms.

Special individual psychiatric procedures are carried out as required against a background of occupational therapy, physical training, educational lectures, group treatment, recreations and entertainments, the last two being provided as far as possible by the efforts of the patients themselves and not from outside sources. Occupational therapy is carried out as at other rehabilitation centers but the educational program deserves special attention. This program has been developed in cooperation with the Army Education Corps. The lectures aim at mental stimulation not only in respect to circumscribed subjects but also in respect to social and political problems, discussions are encouraged and devoting two hours a week to current affairs and citizenship has proved very valuable.

VOCATIONAL ASSESSMENT

A frequent cause of neurosis is maladjustment in the vocational sense with attendant frustration and a sense of futile endeavor. Proper vocational placing after treatment of a neurosis has a great stabilizing value.

While the patient is under psychiatric care and treatment his physician must decide for what type of work he will be most suitable. The patient's performance during early part of the routine of the center has a bearing on this but two other methods give valuable help. They are:

(1) *Psychological Testing.* Carried out by close liaison between the physician and a non-medical psychologist. They investigate intelligence, and clerical aptitudes or mechanical aptitudes in constructional work. These fields are very important in wartime work and the goal of treatment is adjustment to wartime society. A bank clerk may be found to have a high mechanical ability and a laborer may prove to be a potential clerk or draftsman. A change of employment frequently produces a satisfactory mental readjustment.

(2) *Technical Classes and Direct Observation of Performance.* This has been achieved by liaison with local technical institutes whereby patients can attend practical courses outside the hospital and learn such things as engineering, bookkeeping or typewriting. The reports on patients' progress from these institutes are of great value to physicians and great interest to patients.

VOCATIONAL PLACEMENT

Vocational assessment without adequate placement is useless. In the early stages of the war this was difficult to achieve for men in the forces but the army has now developed a system of transfer and special posting in the army so that the square pegs are placed in the square holes. Medical opinion and suggestion is given to the special department of the War Office which handles this problem and the individual is suitably placed. There is a constant close liaison between hospitals and this special branch of the War Office and results have been very satisfactory indeed.

For men discharged from the Service and for civilians every effort is made to see that their civilian jobs are as useful and vocationally suitable as possible. This has been achieved by close liaison with the Ministry of Labor.

These two developments with the Army and the Ministry of Labor have done much to improve hospital morale, to further rehabilitation of patients and to prevent invalidism.

Schools Approved for Training Physical Therapists

By Council on Medical Education and Hospitals of the American Medical Association

Name and Location of School	Entrance Requirements*	Emergency Course				Regular Course			
		Length in Months	Classes Start	Tuition	Certificate, Degree, Diploma	Length in Months	Classes Start	Tuition	Certificate, Degree, Diploma
Army and Navy General Hospital, Hot Springs National Park, Ark.	†	6	JanJul	None	Certificate	..	.....	....	.....
Children's Hospital, Los Angeles	a-b-c	6	FebAug	$200	Certificate	12	FebAug	$200	Diploma
College of Medical Evangelists, Los Angeles[1]	a-b-c	..	.....	....	.....	12	JanJuly	$215	Certificate
University of California Hospital, San Francisco[1]	a-b	..	.....	....	.....	12	MarOct	$150	Certificate
Stanford University, Stanford University, Calif[1]	a-b-d[2]	7	Quart.	$286	Certificate	10	Quart.	$409	Cert. or Degree
Fitzsimons General Hospital, Denver	†	6	FebAug	None	Certificate	..	.....	.....	.....
Walter Reed General Hospital, Washington, D. C.	†	6	Quart.	None	Certificate	..	.....	.....	.....
Northwestern University Medical School, Chicago	a-b-c	..	.....	....	.....	9	JulyOct	$200	Certificate
State University of Iowa Medical School, Iowa City	b-c	6	MarSept	None	Certificate	9	MarSept	None	Certificate
Bouve-Boston School of Physical Education, Boston	a-b-c[3]	6	June	$250	Certificate	3-4 yrs.	Sept	$400 yr.	Dipl. or Degree
Harvard Medical School, Boston	a-b-c	6	MarSept	$250	Certificate	9	MarSept	$300	Certificate
Boston University Sargent College of Physical Education, Cambridge, Mass.	a-b-c	Given in conjunction with Harvard				19	Oct	$435 yr.	Cert. & Degree
University of Minnesota, Minneapolis[1]	a-b-c[4]	..	.....	....	.....	12	March	$168[5]	Certificate
Mayo Clinic, Rochester, Minn.[1]	a-b-c	6	JanJuly	None	Certificate	9	JanJuly	None	Certificate
Barnes Hospital, St. Louis	a-b-c	..	.....	....	.....	9	Oct	$200	Certificate
St. Louis University School of Nursing, St. Louis[1]	a-b-c[3]	8	JanSept	$250	Certificate	4 yrs.	JanSept	$250 yr.	Cert. & Degree
O'Reilly General Hospital, Springfield, Mo.	†	6	JanJuly	None	Certificate	..	.....	....	.....
Columbia University, New York City	a-b-c	..	.....	....	.....	10	FebSept	$390	Certificate
Hospital for Special Surgery, New York City[1]	a-b-c	6	Jan	$200	Diploma	9	Sept	$300	Diploma
New York University School of Education, New York City[1]	a-b-c	..	.....	....	.....	9	FebSept	$432	Cert. or Degree
Duke University School of Medicine, Durham, N. C[1]	a-b-c	..	.....	....	.....	9	Sept	$200	Certificate
Cleveland Clinic Foundation Hospital, Cleveland	a-b-c	..	.....	....	.....	9	Sept	None	Certificate
D. T. Watson School of Physical Therapy, Leetsdale, Pa.[1]	a-b-c	6	AprOct	$200	Diploma	12	Oct	$200	Diploma
Graduate Hospital of the University of Pennsylvania, Philadelphia, Pa.[1]	a-b-c	..	.....	....	.....	12	JanSept	$200	Certificate

Name and Location of School	Entrance Requirements*	Emergency Course: Length in Months	Emergency Course: Classes Start	Emergency Course: Tuition	Emergency Course: Certificate, Degree Diploma	Regular Course: Length in Months	Regular Course: Classes Start	Regular Course: Tuition	Regular Course: Certificate, Degree, Diploma
Brooke General Hospital, San Antonio, Tex.	†	6	JanJuly Oct	None	Certificate	..	.....	.....	.....
University of Texas School of Medicine, Galveston	a-b[6]	..	.....	....	.....	9	JanMar July	$130[5]	Certificate
Richmond Professional Institute, Richmond, Va.	a-d[6]	6	Sept	$200[5]	Certificate	9-12	Sept	$200[5]	Cert. & Degree
University of Wisconsin Medical School, Madison[1]	a-b[7]	6	AprOct	$72[5]	Certificate	12	AprOct	$96[5]	Certificate

* Courses are so arranged that any of the entrance requirements will qualify students for training. a = Graduation from accredited school of nursing; b = Graduation from accredited school of physical education; c = Two years of college with science courses; d = Three years of college with science courses.

† For complete information regarding entrance to Army training schools write to Major Emma E. Vogel, Director of Physical Therapy Aides, Office of the Surgeon General, War Department, Washington, D. C.

1. Male students are admitted.
2. High school graduates accepted for a four-year course leading to A.B. degree; students admitted quarterly and tuition is $143 per quarter.
3. High school graduates admitted to regular course.
4. Medical technology graduates with B.S. degree also admitted.
5. Nonresidents charged additional fee.
6. Those with degree from any accredited college also accepted.
7. Students with two years of college admitted to emergency course only.

For information regarding education write to Miss Mary Nesbitt, Chairman, Education Committee, Massachusetts General Hospital, Boston, Mass.

Reprints

"Physical Therapy as a Vocation"

"Approved Schools of Physical Therapy"

The Constitution of the American Physiotherapy Association

Code of Ethics and Discipline of the American Physiotherapy Association

The Blue Booklet, "The American Physiotherapy Association is Organized to Serve"

"What Does a Physical Therapy Department Contribute to a Hospital?"

"Opportunities for the Physical Therapist"

"Role of the Physical Therapist in the Care of the Crippled Child"

"Ethics and the Physical Therapy Technician"

Ideal Pre-Physical Therapy Curriculum Outline

To obtain any or all of these reprints, address Hazel E. Furscott, Chairman, Relations Committee, 219 Fitzhugh Building, San Francisco, California. Single reprints, 10c; complete set of reprints, 25c. Free to nonmembers.

The Physiotherapy Review

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As the Fall and Winter of 1944-45 approaches most chapters will reconvene after a summer holiday. The year that lies ahead is always a challenge. What will it bring? First, we hope, victory! With that comes even greater obligation to us as a profession. Every chapter should make it their responsibility to keep themselves informed of rehabilitation plans in their community and state; know what legislation, both federal and state, is pending, and know the place of private agencies in a total program for the physically disabled.

The REVIEW will try to do its part and report on rehabilitation plans from time to time. Give your program good publicity—get your members out. Invite members of other organizations who would and should be participating in a total rehabilitation plan. Rehabilitation, we must bear in mind, is not only for the war wounded, but for those injured in industry and all of those who have a physical handicap, either congenital or acquired.

The total of anterior poliomyelitis cases this summer has reached an alarming height, approaching the largest total since 1916. This has put the medical and hospital resources of many communities to a severe test. The National Foundation for Infantile Paralysis, through its national and local facilities, has been and is meeting the emergency. What do you and your chapter know of the National Foundation for Infantile Paralysis? It may be your community next year that will be in need of assistance.

Another suggestion to your program chairman—are your members who are overseas going to return to an active, well-informed chapter? They will be looking forward to that first meeting; you will want to know of their experiences and they will want to know yours. Let us get ready for that day.

Executive Secretary

The Executive Committee of the American Physiotherapy Association announces with regret the resignation of Evelyn Anderson May as Executive Secretary. Mrs. May served as secretary of the Association 1940-1944 and as Executive Secretary since March 1944. She has gone to England to join her husband who is stationed there. She will continue active membership in the American Physiotherapy Association and expects to do physical therapy in England. The Association appreciates greatly the contribution which Mrs. May has made in the development of the organization. Her sincere interest and pleasing personality have won her many friends whose wishes go with her in her new home.

* * * * *

The Executive Committee is glad to announce the appointment of Mildred Elson as Executive Secretary to fill the position left vacant by the resignation of Mrs. May. Miss Elson will come to the national office in September. She brings to her new work a broad background of experience in the work of the Association. She is best known as Editor of THE PHYSIOTHERAPY REVIEW in which capacity she has served since 1936. The Association is indeed fortunate to have her able leadership in this important post.

American Congress of Physical Therapy

The 23rd annual session of the American Congress of Physical Therapy was held September 6, 7, 8 and 9, 1944, at the Hotel Statler in Cleveland, Ohio. The American Physiotherapy Association was invited to participate, and the following program was presented:

Officers of Section

Chairman: JESSIE L. STEVENSON, President, American Physiotherapy Association.

Secretary: RUTH PRATT, President, Ohio Chapter, American Physiotherapy Association.

A Rehabilitation Center for the Injured Worker

Guest Speaker: JOHN S. COULTER, M.D., Professor and Chairman of Department of Physical

Medicine, Northwestern University Medical School; Chairman, Council on Physical Therapy, American Medical Association, Chicago.

PRACTICAL DEMONSTRATION: *Walking Re-education.*

CATHERINE GRAHAM, Chief Physical Therapy Technician, Mt. Sinai Hospital, Cleveland.

I. Preparation of the patient for walking
   - Good body alignment during the period of bed rest
   - Exercises to maintain and develop good muscle tone
   - Psychologic preparation of the patient and family
   - Shoes

II. Teaching normal standing posture, balance and shifting of weight

III. Crutches
   - Types of crutches—advantages and disadvantages of each
   - Measurement—length and height of hand bar
   - Padding
   - Tips—examples of various kinds
   - Canes—height, strength

IV. Demonstration of various methods of using crutches and indications for the use of each type
   - Psychologic Factors
   - Gaits
     - Four Point
     - Two Point
     - Both crutches and the opposite leg
     - Swinging

V. Desired end results in teaching walking
   - Getting in and out of bed and chair
   - Going up and down stairs and inclines
   - Getting in and out of car
   - Getting in and out of bathtub
   - Toilet

VI. Adaptations in furniture and equipment to help carry out activities listed

VII. Teaching walking as crutches and canes are discontinued

Discussants: JESSIE L. STEVENSON, HELEN L. KAISER, ALICE LOU PLASTRIDGE and MILDRED ELSON.

"The Army Nurse"

"The Army Nurse" is a new publication, issued monthly by the Nursing Division, Office of the Surgeon General, Washington, D. C., and is printed for the benefit of nurses, Medical Department physical therapists and dietitians and occupational therapy aides. It is circulated among the Army hospitals of the United States and overseas. The following material is reprinted from Volume 1, Number 6, June 1944, of this publication:

"The Physical Therapy Department is in a separate brick building at the end of the surgical walk and is situated next door to the orthopedic wards. There are three good-sized bakers of white enamel and several small bakers large enough for a knee or an ankle. Then there are two large floor luminous lamps. There is one mercury arc ultraviolet lamp and one very large baker of copper, large enough for an entire back. It has twelve bulbs in it. All heat is luminous, no true infra-red. There is no gym equipment, except for a finger walk and pulleys for quadriceps exercises. It is a busy department, open seven days of the week, and treats out-patients from the surrounding camps as well as patients admitted to this hospital. The major in charge of orthopedics has his office in the P.T. building, and every afternoon he usually holds P.T. consultations.

"Behind the department proper there is a large room used as the gym and there from early morning right into the day, a corpsman carries out reconditioning exercises. Each man is classified according to group, and as he improves physically, his group classification changes. The gym is open at a certain period of the day for N.P. patients, and at another time for officer patients. So much time is spent doing routine calisthenics, and the rest in play. There are basketball fixtures, mattresses for reclining exercises, and screen-wired windows.

"When the patients are still in bed, they are put in class one and given ten minutes of exercises four times a day to keep them 'active.' Usually these consist of deep breathing exercises, foot circling, quadriceps setting, alternate straight leg raising, hyperextension of legs. Of course, they vary with the diagnoses. We take care of group one calisthenics, and until the patient is ready for the gym.

"My day is quite full. My morning is spent visiting group one patients on wards. Then I have appointments in the department right up through 11:30 a.m.—patient's mess. My afternoon right now is spent running a U.V.R. clinic for the nurses who have been over so long. Upper respiratory infections are quite common, and they are trying to keep up the resistance as much as possible. Of course, there are a few knees and backs to do between these treatments."—*(Edna V. Mirkin, 2nd Lt., PTA.)*

"When we first arrived in Italy, I had the opportunity that I had been hoping for. On a 24

hours' notice, our hospital pitched tents and ran an emergency hospital. On this same notice, physical therapy functioned. We had no regular equipment and were given 3 small rooms, no lights, no water, no heat. In the next room, used as a cast-room, x-ray, dressing-room and examining room, there was a pot-bellied stove. We were able to obtain 2 examining tables and a packing crate, 6 blankets, 25 bath towels, 6 buckets. Water was carried from a hot spring about a block away and kept hot by the pot-bellied stove. 15 candles were melted in two No. 10 cans, the paraffin was applied by means of a piece of gauze on a stick. Chairs and a table were borrowed from our quarters. Later a gas engine generator was obtained and an infra-red lamp was set up.

"Last Saturday I had all the physical therapists in this area to luncheon. This gave us an excellent opportunity to meet one another and we found that most of our problems were similar. We have decided to meet as a group once a month. I was very pleased when our Commanding Officer accepted the invitation to attend and also assured us that this hospital and he himself was behind us in our organization. Some physical therapists in this area were unable to attend, but still we had 23 here. Being by myself so much of the time last year, and far from other physical therapists, I had lost contact with those of the profession."—*(Metta L. Baxter, 1st Lt., PTA.)*

The following is copied from a letter written to her mother by 2nd Lt. Edna Blumenthal, M-670, MDPT, in a General Hospital, now overseas:

Somewhere in France
12 July 1944

So much has happened in so short a time that it is difficult to know just where to begin but as you are always anxious to hear about our living conditions I shall start with our housing.

At present a group of us are living in an old French Chateau—at one time headquarters of our unpleasant enemy. There are remnants of beauty intact. Chandeliers are lovely. The drapes in the dining room are made of heavy beige material with what looks like a border of hand-made petitpoint (a flower pattern). They are lined with a soft felt-like material. Curiously the material on each window is plain beige velvet. Ivory and gold furniture with tapestry upholstering is scattered throughout the house. There has been too much to see to count the rooms but they are plentiful. The wall paper in some instances is beautiful and expensive-looking. The library is a conglomeration of French and German books. There are bathrooms all over the place and we are lucky enough to have running water and electricity. The water is not for drinking but our Army has parked a water carrier in the garden for our use. *All* the water is cold but we are used to that by now. There are two pianos —a baby grand downstairs in the lovely blue room where several of my pals sleep. Mirrors are plentiful and all has been well kept. We are absolutely safe—Uncle Sam even keeps a guard with us just in case we want anything. Please believe me, I am telling you the absolute truth—we are perfectly safe.

The garden is small but very pretty. Flowering hedges and shrub are in bloom as are the roses and honeysuckle. There is a small greenhouse where a grapevine shows promise of fruit in the fall. The streets are winding but wide like ours at home. As to the people on the streets—there are all kinds—everyone looks quite healthy, well kept and some of the women quite smartly dressed. Most of us have noticed that their hair is well cared for and make-up is worn with good taste. Naturally, we see just the people on the streets. Stockings (silk) are worn by a few—children often wear shoes, many women wear wooden-soled shoes.

We eat at a hospital a short distance from here and we go in a group and come back the same way. Tomorrow is my day to go to the town for a few hours with four companions. Those who arrived long before us have bought up all the perfume but we want to see what there is to see.

I have told you about our living quarters first because it is so pleasant but there are many Frenchmen who are not as fortunate. Our ride here in a vehicle was an experience *never* to be forgotten. I've lived a good many years and have heard that war is hell but not until that ride did the full realization of hell make itself known. I didn't know that there could be such fiendish devastation. One town was completely wiped out. By that I mean there was not one building left standing. As we came up a small hill the complete ruin of what was once a home was silhouetted against the blue sky. The smell of burnt wood was still in the air throughout the town. Rubble was everywhere and through it all children cheered us as they held up their hands in the V sign for victory This was just one of the towns we went through—there were many more. Others not as bad but full of shattered buildings with folks walking the country road with whatever they could recover from the shambles that once they called home. In many places German signs have not been taken down because there is so much

other work to be done. Now I can understand why we need gasoline, why metal, wire, wood, paper, everything is of such great value. It will take ages to replace all the material things that have been shattered. Nothing, of course, can ever take the place of the small body in a rough hewn coffin on a two-wheeled cart pushed by hand. I guess we experienced every conceivable emotion on that unforgettable ride. It brought home to us the true value of freedom—it made us think of home and we were grateful that the war was not on our soil. Whatever we can do to alleviate suffering and want will only be a "drop in the bucket" in comparison to the sacrifices made by these people. In England it was different—the shattered buildings were of long standing but all this has been recent enough that even the smell of things still lingers in the air—after all D-Day was only a little more than a month ago. There were shell holes in the road that had been repaired. It will take time for me to get perspective on all this—I'll write about it in a more objective vein some time—right now it is all too poignant to do much writing at all—I'm in the "feeling" stage.

We have had several homes since we came over—we have slept in tents, in ambulances, on litters and in a house. Quite a variety! We have been drenched, we have sweltered in our heavy suits, we've washed our fatigues in a helmet, we have eaten packaged food, and we dined on chicken and fresh oranges. Each day brings new surprises but at all times we are well fed. We are the huskiest, healthiest bunch of females that you have ever seen. Many of the girls roared with laughter when our shoes were drenched and they would think of how all you mothers would shudder—but we wear woolen socks and our feet stay dry. Maybe we turned into ducks but since going through our "hardening up" training most of us have been much healthier. We get plenty of rest. The day will come when we won't—so we are prepared.

I couldn't tell you before but we have been truly trained for a rugged existence for a long time. We have lived in tents for ages in all kinds of weather, we sloshed along in mud, have even taken long hikes with a pack on our back, we've drilled, had calisthenics, lectures and practice on and in military subjects—in fact we have had some excellent training. We are smart enough to know what to do and what not to do—what to touch and what not to touch but even so the Army guards us like precious jewels. You should see the looks of amazement when the men realize we are women.

Change in Designation of Physical Therapy Personnel

In accordance with Public Law 350 (78th Congress) dated June 22, 1944, military rank was authorized for members of The Army Nurse Corps and dietetic and physical therapy personnel in the Medical Department of the Army.

In this connection, The Adjutant General issued instructions to The Commanding Generals of all Service Commands and Theaters relative to the change from relative to full military rank for the above personnel.

In commissioning of physical therapy personnel, the term "physical therapy aide" was discontinued and the title "physical therapist" was authorized. The former term "aide" was too often confused with untrained personnel in other categories.

A Physiotherapy Clinic in the Jungle

A physiotherapy clinic was created recently out of makeshift materials by members of a hospital unit on the Ledo Road, the highway which Allied troops are building from Assam, India, through Burma to China against the vigorous opposition of the Japanese.

Lieutenant Colonel Willis M. Weeden, Medical Corps, of Woodbury, Connecticut, Chief of Surgery in the unit, saw the need for physiotherapy as a means of functional restoration for patients with fractures, contusions, and various injuries of muscles, bones, and joints. The hospital unit had no physiotherapy facilities.

Colonel Weeden selected Captain Hyman D. Stein, Elkins Park, Pennsylvania, and Second Lieutenant Pauline Moudy, ANC, Alhambra, California, to devise the clinic. Neither Captain Stein nor Lieutenant Moudy had had experience in physiotherapy, but Lieutenant Moudy had been a victim of infantile paralysis and she knew, from the patient's point of view, what was required.

The two officers took over a small space in a bamboo basha, decided upon the type of treatment for their patients, and set to work to make the equipment. The first thing needed was an apparatus to provide dry heat. This was made from a crate with a socket for an electric light in the center. A weight-lifting device for exercising arm and leg muscles, which had become atrophied through disuse, was devised from stirrups to

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which ropes and weights were attached. A grateful Chinese officer contributed a bicycle for the patients requiring leg exercises.

Old gasoline tanks were used for whirlpool foot and arm baths. A fifty-gallon gasoline drum, with a false bottom built a foot from the base, was prepared to heat water. Between the false bottom and the base an opening was made for the insertion of bamboo chips which could be set afire under the water. The hard rubber core of an over-age softball, found in the game chest, was utilized for hand and finger exercises.

Some of the devices and gadgets looked rather formidable and Lieutenant Moudy wondered, she said, if the Chinese patients, unfamiliar with modern medical methods, might refuse to use them; but they went for them like children for new toys. Even when the treatments were painful, they never failed to express their thanks on leaving. When they came back for more treatments, they often brought gifts for Lieutenant Moudy, usually artificial flowers made from paper and cellophane. Some of the patients made the clinic gifts of devices to be used in treatment.

Army Promotions

The Surgeon General of the Army announces the promotion of the following physical therapists from the rank of Second Lieutenant to that of First Lieutenant:

Anderson, Elizabeth, overseas

Berman, Sophie, Sta. Hosp., Coral Gables, Fla.

Georg, Elma L., overseas

Harris, Jean, Newton D. Baker Gen. Hosp., Martinsburg, W. Va.

Helm, Dorothy, overseas

Heltman, Grace, Crile General Hosp., Cleveland, Ohio

Linduff, Florence, overseas

Peterson, Lois, Sta. Hosp., Camp Kilmer, N. J.

Sathre, Coral Bailiff, Sta. Hosp. AAB, Greensboro, N. C.

Stanek, Karla, overseas

Swanson, Alice, Fitzsimons General Hospital, Denver, Colo.

Warner, Dorothy L., Sta. Hosp., Chanute Field, Ill.

Whittaker, Elizabeth, Northington General Hospital, Tuscaloosa, Ala.

The following promotions from the rank of First Lieutenant to that of Captain also are announced:

Clarke, Felie, Lawson General Hospital, Atlanta, Ga.

Rhodes, Margaret Lowry, Percy Jones General Hospital, Battle Creek, Michigan

WACS Commissioned

Thirty-nine enlisted members of the Women's Army Corps completed physical therapy training of almost a year's duration and were formally commissioned second lieutenants in the Medical Department of the Army.

In nine Army hospitals located in various sections of the country, these former WACS were ushered into their official status with varying ceremonies. Formal retreat in their honor was staged at Fort Devens, Massachusetts, where five of them finished training at Lovell General Hospital. Strength of the physical therapy organization is less than a thousand at present but an active recruiting effort is being made to increase this number.

"These former enlisted WACS are becoming officers of the Army at a time when their services are in urgent demand throughout the world," commented Major Emma Vogel, Director of Physical Therapists, Office of The Surgeon General of the Army.

"The initial 39 have done an outstanding job. Our training program has been so popular with them that additional courses have been provided. It is now possible for civilian women, who meet all the requirements, to enlist in the Women's Army Corps for the express purpose of taking this training.

"Casualty accounts from our overseas engagements are potent evidence of the need for physical therapists. These women have the opportunity of treating our wounded soldiers returned from those battle fronts and of experiencing the deep spiritual satisfaction that comes from aiding a patient to overcome his disability," Major Vogel stated.—*(From War Dept., Bureau of Public Relations.)*

Major General Norman T. Kirk, Surgeon General, U. S. Army, returned on July 21 from visits to the Italian and Normandy battle fronts where he inspected medical facilities including those at battalion aid stations, as well as Army hospitals in England during his twenty-day trip.

On July 27, the Army Medical Department observed the 169th anniversary of the establishment of the first medical service for the American Army. The Medical Department had its inception in the creation by the Continental Congress, July 27, 1775, of a hospital for the American forces shortly after George Washington assumed command in the Revolutionary War.

Council on Physical Therapy Becomes Council on Physical Medicine

At the nineteenth annual meeting of the Council on Physical Therapy during December 1943 a motion was passed unanimously recommending to the Board of Trustees that the name be changed to the Council on Physical Medicine. At the recent annual session of the American Medical Association in Chicago the Board of Trustees recommended to the House of Delegates, and the House of Delegates acted favorably on this recommendation; as a result, the Council on Physical Therapy has now become the Council on Physical Medicine.

The designation "physical medicine" is a more inclusive term. Physical agents are used not only for therapy but also for diagnosis. Hospital departments of physical medicine, when they employ electric tests for reaction of degeneration or perform such tests as the cold pressor test, are employing physical agents not for therapy but for diagnosis.

The Council has for some time interested itself in certain phases of occupational therapy, which is a branch of the broad field of physical medicine. The Council was informed that the American Occupational Therapy Association was anxious to have the Council give more attention to occupational therapy. Discussions between representatives of the Council and the American Occupational Therapy Association indicated that the association would welcome the inclusion of occupational therapy under a Council on Physical Medicine.

Under the following definition for physical medicine, the entire field can be covered by a Council on Physical Medicine: Physical medicine includes the employment of the physical and other effective properties of light, heat, cold, water, electricity, massage, manipulation, exercise and mechanical devices for physical and occupational therapy in the diagnosis and treatment of disease. The Council believed that it would be wise to appoint a special subcommittee of five physicians interested in occupational therapy who could help to bring this phase of therapy more fully under direct medical supervision.

Finally there is definite precedent for the use of the term "physical medicine," which has long been considered the most acceptable term by our British colleagues. The Conjoint Board of the Royal College of Physicians and the Royal College of Surgeons has just instituted a diploma in physical medicine.

With its new name the Council on Physical Medicine will continue to function as it has always functioned but will devote additional attention to problems of occupational therapy.

—From J. A. M. A., 125:13:912, July 29, 1944.

Odd Shoe Exchange

A letter has been received from the National Odd Shoe Exchange of St. Louis, Missouri. This organization is for persons who, through disease or injury, wear shoes of different sizes and persons who, because of amputation, wear only one shoe. Many of these individuals must buy two pairs of shoes in order to get one properly fitting pair. Not only does this involve a double expense, but presents another problem: What to do with the other pair of mismates in order to keep them from going to waste?

The organization has received letters in answer to cards sent out, proving that many lame persons are having such problems and are eager to have them solved. A file is kept of persons wearing two sizes, with the exact measurements of both feet. When two persons who might be able to exchange shoes with each other are found, they are notified. Further arrangements such as disposal of collected shoes, as well as style, size, etc., for future pairs, is worked out between the two individuals.

For further information regarding this organization, write to Ruth C. Rubin, O.T.R., Director, National Odd Shoe Exchange, 6267 Clemens Avenue, St. Louis 5, Missouri.

Medical Motion Pictures

A number of medical motion pictures on physical therapy and related subjects are now available. The American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois, lists the following titles: Aids in Muscle Training, Contraction of Arteries and Arteriovenous Anastomoses, Effects of Heat and Cold on the Circulation of the Blood, Effects of Massage on the Circulation of the Blood, Massage, Occupational Therapy, and Underwater Therapy.

The British Information Services, 360 North Michigan Avenue, Chicago 1, Illinois, has two films of interest which may be borrowed for nominal service fees: Life Begins Again, and Psychiatry in Action.

The American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois, does not maintain a library of films, but have a publication listing medical motion pictures approved by the College which may be obtained from individuals or organizations.

Poliomyelitis Epidemic

In the first 31 weeks of 1944, the United States has had more cases of infantile paralysis reported than at any comparable time shown on the records in 28 years, The National Foundation for Infantile Paralysis reported recently.

Latest figures from the U. S. Public Health Service, showing state reports through August 5, reveal a total of 3,992 cases. This is 1,226 cases more than reported for the same period last year when the nation suffered its third worst poliomyelitis epidemic, and 1,089 cases more than in 1931 when the second worst outbreak was recorded. The records of the worst outbreak in 1916 show there were 6,767 cases by August 1 of that year.

In five states where the outbreaks are in epidemic or near-epidemic proportions, the total cases reported through August 5, 1944, are higher than those states reported for the entire year of 1943. They are:

State	*Through Aug. 5, 1944*	*Entire Year of 1943*
New York	902	692
North Carolina	470	37
Kentucky	377	157
Pennsylvania	284	143
Virginia	205	61

The serious or threatening outbreaks this summer are confined almost entirely to states east of the Mississippi, while last year's were largely west of the river.

Basil O'Connor, president, reported that the National Foundation has sent epidemic aid, either in emergency funds, professional personnel or supplies and equipment, into 13 affected states. In addition to the five named above, they are: Ohio, Tennessee, Michigan, Mississippi, Indiana, Washington, Oregon and California. Outbreaks in the latter three states earlier this year have now waned.

Muscle Spasm in Poliomyelitis

The Kenny concept and treatment of poliomyelitis have aroused special interest in the muscle spasm said to be characteristic of the disease and against which that treatment is especially directed. The muscles in spasm are painful on stretch or pressure, and the condition may lead to dysfunction and deformity. Spasm is claimed to be present in every case, but there appears to be no direct relation between it and motor paralysis. The mechanism of muscle spasm in poliomyelitis is now the subject of active investigation. Results at hand agree that the spasm is not due primarily to any process within the muscle but that it is a reflex phenomenon. On the basis of their own work and after consideration of recent research in the physiology of the spinal cord by Lloyd and others, Bouman and Schwartz conclude that in poliomyelitis impulses from higher centers inhibitory of muscular contraction "are blocked in very close proximity to the motor neurons." Kabat and Knapp report that in acute and subacute poliomyelitis spinal anesthesia by means of procaine "led to relaxation of muscle spasm to a marked extent." In 1 case the intravenous injection of beta-erythroidine hydrochloride was followed by definite relaxation of muscle spasm and of pain on passive motion. This drug blocks the myoneural junction. These investigators also found that, in the dog, temporary arrest of circulation in the spinal cord caused changes in the internuncial pathways and resultant muscle spasm. Finally, they report that in some 68 cases of poliomyelitis an internuncial cord lesion was found almost constantly and that in 26 of these cases the internuncial lesion was accompanied by "relatively normal anterior horn cells." Measurements of chronaxia did not give any evidence of relation between muscle spasm and damage to the neurons in the anterior horns. These brief references to current investigations of poliomyelitis spasm show that significant results are being obtained. The spasm is apparently neurogenic and due to the blocking of reflexes by lesions in the gray matter of the cord; also the spasticity is influenced by anesthesia and by drug action. These results indicate progress, and we look forward hopefully for scientific contributions to the treatment of the muscle spasm of poliomyelitis.

—From J.A.M.A., 125:1:35, May 6, 1944.

National Society for Crippled Children

The National Society for Crippled Children, Inc., will hold its twenty-second annual meeting at the Edgewater Beach Hotel in Chicago, Illinois, October 30 to November 1, 1944. The theme is "Our Program During and After the War."

Mississippi Valley Medical Society

The Mississippi Valley Medical Society will hold its tenth annual meeting at Peoria, Illinois, September 27 and 28, 1944, at the Pere Marquette Hotel.

Save old rubber, save waste paper
Save the celery tops for stew.
But with all your war-time saving
Save your sense of humor, too!

—From "Physioscope," November 1943.
(News Bulletin, Ohio Chapter, American Physiotherapy Association.)

New Members

The following are newly accepted members of the American Physiotherapy Association (provisional memberships unless otherwise noted):

Beckley, Norma Burckhalter, Benge, Wash.
Bergstrom, Charlotte M., McCaw General Hospital, Walla Walla, Wash.
Closson, Mary K., Winter General Hospital, Topeka, Kans.
Comer, Due D., Box 54, Kennedy General Hospital, Memphis, Tenn.
Dean, Priscilla A., 5200 S. Hyde Park Blvd., Chicago, Ill.
Fitch, Barbara Marie, 4555 E. Washington, Pasadena, Calif.
Kalovin, Eleana D., 15 Cooper St., New York, N. Y.
King, Ruth Allison, Nurses Quarters, Station Hospital, Camp Robinson, Ark.
Kranz, Alice, Nurses Quarters, Bushnell General Hospital, Brigham City, Utah.
Kube, Ilse, 519 W. 167th St., New York, N. Y.
Markham, Blanche I., Box 47, Holden, Mass.
Mendelsohn, Florence E., 216 Spring St., New Haven, Conn.
Pingel, Sister Mary Imelda, Firmin Desloge Hospital, 1325 S. Grand Ave., St. Louis, Mo. (Active)
Rahrig, Florence G., Danbury Hospital, Danbury, Conn.
Rieger, Charlotte Hansen, 608 "G" St., Brawley, Calif. (Active)
Stubbe, Augusta V., P.O. Box 3588, San Juan, Puerto Rico. (Active)
Sykes, Mrs. Louise Olson, 722 N. Wheaton Ave., Wheaton, Ill.
Walker, Margaret, 4515 Sinclair Ave., Austin, Tex.
Wardley, Annette, 3927 Canterbury Road, Baltimore, Md.
Winship, Louise Elizabeth, 49 Oxford St., Winchester, Mass.

Recent graduates of Barnes Hospital, St. Louis, Mo.:

Almquist, Mary E.	Hendren, Jo Ann
Devendorf, Dorothy	Nesbitt, Winifred R.
Dodd, Ruby Faye	Vandiviere, Blanche A.
Hart, Helen F.	

Recent graduates of Bouve-Boston School of Physical Education, Boston, Mass.:

Atkinson, Doris	Porter, Ann
Canavan, Frances	Rathgeber, Barbara
Gordon, Madeline	Ridgely, Betty
Harrington, Lois	Stover, Ann
Macnee, Frances	

Recent graduates of Duke University Hospital, Durham, N. C.:

Perkins, Barbara S.	Riddleberger, Philip H.
Poole, Margaret	Riebel, John D.

Recent graduates of Cleveland Clinic, Cleveland, Ohio:

Bell, Dorothy A.	Johnson, Elvy Inez
Bell, Joan Louise	Krumhansl, Bernice R.
Corson, Virginia A.	Lantz, Marye
Crist, Janet A.	Schriber, Audrey
Fouts, Gertrude O.	Spark, Dorothy
First, Ruth E.	Van Stensel, Ruth G.
Houpt, Daisy Helen	Whipple, Marguerite E.

War Production Board Eases Restrictions on the Manufacture and Sale of Physical Therapy Equipment

The War Production Board recently announced that restrictions on the manufacture and sale of physical therapy equipment have been eased and that medical practitioners and hospitals may now buy certain types of equipment that formerly were restricted to these groups and to hospitals. In addition, three types of physical therapy equipment, generally approved by the medical profession for home use, may now be sold to the public on prescription or order of a licensed medical practitioner. Action was taken on April 7 by amending order L-259 (physical therapy equipment). The order as issued in February 1943 placed strict control on production and distribution of this equipment and prohibited the manufacture of most types except for the armed services and lend-lease. Types that may now be manufactured are those most needed for general use. They are listed in schedule A of the order as follows: electric bakers, fever cabinets, galvanic generators, infra-red generators, low voltage generators, magnetic field generators, medical diathermy units, passive vascular exer-

cise apparatus, surgical diathermy units, ultraviolet radiation equipment and whirlpool baths. These items may be sold to the armed services, to lend-lease, for licensed export orders, to hospitals and medical departments of industrial concerns, to medical practitioners and to distributors for delivery for these users.

Three types of equipment in schedule A (electric bakers, infra-red generators and ultraviolet radiation equipment) may be sold or rented to the public on written prescription of a medical practitioner licensed to use physical therapy equipment. Formerly the only types that could be made for civilian use (hospitals) were electric bakers, fever cabinets, major ultraviolet radiation equipment, passive vascular exercise apparatus and surgical diathermy units. Monthly scheduling reports are no longer required from manufacturers. However, quarterly reports of shipments of electric bakers, infra-red generators and ultraviolet radiation equipment to purchasers other than the armed services and lend-lease must be made by manufacturers. One combined dollar value figure is required. Distribution controls established by the order are designed to place the equipment that may now be manufactured in the hands of those having an urgent need for it, the War Production Board said.

—From J.A.M.A., 125:1:39, May 6, 1944.

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Early Treatment of Infantile Paralysis. LT. COMDR. HERBERT E. HIPPS AND BILLIE LOUISE CROOK. Arch. P. T., July 1944.

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Rheumatism and the Menopause. FRANCIS BACH, D.M. Brit. J. Phys. Med. and Industrial Hygiene, May-June 1944.

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A Pneumatic Leg Splint. C. J. CURRY, M.D. J.A.M.A., Aug. 5, 1944.

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Fatal Circulatory Failure Caused by Electric Shock Therapy. WALTER W. JETTER, M.D. Arch. Neurology and Psychiatry, June 1944.

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ABSTRACTS

John S. Coulter, M.D.

Evaluation of the Kenny Treatment of Infantile Paralysis: Report of Committee

Ralph K. Ghormley, M.D., Chairman, Professor of Orthopedic Surgery, University of Minnesota, Postgraduate School, Rochester, Minn.; Edward L. Compere, M.D., Associate Professor of Orthopedic Surgery, University of Illinois, College of Medicine, Chicago; James A. Dickson, M.D., Cleveland Clinic, Cleveland; Robert V. Funsten, M.D., Professor of Orthopedic Surgery, University of Virginia Department of Medicine, Charlottesville, Va.; J. Albert Key, M.D., Professor of Clinical Orthopedic Surgery, Washington University School of Medicine, St. Louis; H. R. McCarroll, M.D., Instructor in Clinical Orthopedic Surgery, Washington University School of Medicine, St. Louis, and Herman C. Schumm, M.D., Professor of Orthopedic Surgery, University of Wisconsin Medical School and Marquette University School of Medicine, Milwaukee. In J.A.M.A., 125:7:466, June 17, 1944.

From personal observations of this committee during the past two years, each of ten points can be analyzed and discussed as follows:

1. The institution of treatment directed toward the involved muscles as early as possible is desirable, but the general condition of the patient during the acute febrile stage may be such that the handling necessitated by the Kenny treatment can be detrimental.

2. Proper positioning in bed by one means or another has been a standard practice among physicians for over thirty years to our knowledge.

3. Heat in some form, including hot foments, has been used by physicians for many years to combat pain in infantile paralysis.

4. So long as active and passive movement of these extremities is carried out within the range of comfort, this point is acceptable.

5. Jones and Lovett described and used a method of muscle reeducation which in principle is similar to the method taught by Miss Kenny.

6. Cases have been seen under Kenny treatment in which early contractures were developing, and by application of plaster splints these contractures were controlled after their correction. Braces should form an important part of the treatment during the later stages of this disease.

7. Respirators have saved many lives and should be used for patients with sufficient paralysis to embarrass respirations.

8. There is no evidence that the Kenny treatment prevents or decreases the amount of paralysis.

9. Spontaneous recovery in poliomyelitis occurs in many cases.

10. Pools and baths have long been used in the treatment of poliomyelitis.

In the opinion of the committee, after observation of 740 cases, particularly those during the epidemic of 1943, the continuous hot packs for all patients with minimal evidence of "spasm" is of questionable value and an unnecessary waste of manpower and hospital beds.

Surgery

Geo. H. Bunch, M.D., Editor, Columbia, S. C. In SOUTHERN MEDICINE AND SURGERY, 106:7:259, July 1944.

Refrigeration Anesthesia

Refrigeration is the anesthesia of choice for amputation on diabetic and senile patients. Another of its fields of usefulness is in the surgical care of the indigent down-and-outs who fill the charity wards of every large metropolitan hospital. In these institutions the clinical material is of sufficient volume to permit perfection of technique. In them special operating crews should be trained to work under refrigeration conditions. These unfortunate patients, some of whom have already lost one or more limbs, are entitled to our best efforts.

Continuity in Rehabilitation

W. Arklay Steel, M.D., F.R.C.P., Medical Director, Hillingdon County Hospital, Middlesex. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE AND INDUSTRIAL HYGIENE, 7:3:72, May-June 1944.

As far as results of treatment of fractures and soft tissue lesions are concerned, injuries may be divided into two groups.

Group 1.—Usually there is not any difficulty or anxiety met with in approximately 80 per cent of all traumatic cases treated at a clinic.

Group 2.—The remaining 20 per cent comprise cases of complicated or multiple fractures or both, one or more of which may or may not be compound. These may be divided into three subgroups as follows.

(1) Cases in which difficulties in treatment are encountered and anatomical alignment and full return of function cannot be ensured no matter what treatment may be carried out.

(2) Cases in which from the beginning a bad result can be anticipated, with permanent infirmity and incapacity. This subgroup includes severe multiple injuries, with extensive lacerated wounds, permanently destroying soft tissues and perhaps accompanied by compound fractures.

(3) Cases in which the injuries have been so severe that permanent total incapacity is inevitable.

The greatest difficulty is experienced with the cases in group 2, for in these some degree of disability exists which prevents certain patients from attaining the efficiency necessary for an early return to their former occupation, and in others necessitates a change of occupation.

It is to the hospital brink of this gap that the surgeon takes the patient.

The surgeon should remain in control of treatment throughout until the patient gains a place in his old occupation or obtains alternative work in keeping with the limits of his capacity.

The light work necessary for the graded treatment of a patient is sometimes difficult to find. Often the patient who, at the surgeon's suggestion, discusses with his employer the possibilities of such work is told that none is available. It is lamentable that no niche can be found for the willing worker so that he may rehabilitate himself adequately.

Four Years' Experience with Music as a Therapeutic Agent at Eloise Hospital

Ira M. Altshuler, M.D., Detroit, Michigan. In THE AMERICAN JOURNAL OF PSYCHIATRY, 100:7:794, May 1944.

There is a bright outlook regarding research on music therapy. The electroencephalograph promises wide possibilities. The Davises of Boston found that musical sounds are capable of influencing Berger rhythm. Thus, it will be possible, in the future, not only to register the effect of structural elements and simple compounds of music upon Berger rhythm, but even of symphonies.

The physiological and psychological effect of music, its social, educational and esthetic attributes, place music into a rank no other therapy can measure.

National Program for Physical Fitness: Revealed and Developed on the Basis of 13,000,000 Physical Examinations of Selective Service Registrants

Colonel Leonard G. Rowntree, Med. Res., Chief, Medical Division, National Headquarters, Selective Service System; Vice-Chairman, National Committee on Physical Fitness, Federal Security Agency, Washington, D. C. In J.A.M.A., 125:12:821, July 22, 1944.

The fact that defects are prevalent, as evidenced by the surveys of Selective Service, indicates a widespread need for improvement in physical fitness and health. Not only do the defects, deficiencies, disabilities, disorders and diseases abound, but, in addition, many of the registrants were found to be pampered, soft, flabby and in need of conditioning.

Lack of physical fitness prevailed among the youth of the country because the nation failed to recognize its importance and because youth itself failed to earn fitness. Where does the fault lie? The present situation is the result of indifference and apathy on the part of the government, states, municipalities, parents, teachers, churches, the medical and dental professions, the U. S. Public Health Service and, to a certain extent, of youth itself.

The immediate need is the formation of a functional joint committee of the American Medical Association and the National Council on Physical Fitness with strong and equal representation of the two organizations. This will furnish a broad based competent, professional leadership for a movement that will be immediately largely remedial in character but which from the beginning will be preventive in character and more so as the program evolves. The program should immediately seek Presidential and Congressional support to help in the improvement of physical fitness of the civilian population, to make it a part of the American consciousness and even of the American conscience by declaring the twelve months beginning with September 1944 a year of emphasis on physical fitness.

Medicolegal Aspects of Physical Medicine

Captain H. H. Buckelew, M.C., A.U.S. In ARCHIVES OF PHYSICAL THERAPY, 25:6:328, June 1944.

Malpractice may be likened to a disease in that it is endemic if not epidemic in distribution, and its incidence is increasing to such extent that it warrants consideration. The predisposing factors are ethical instability or deficiency, carelessness and lack of forethought and tact. Symptoms of this disease are (1) tactless or careless medical personnel and (2) a disgruntled or dissatisfied patient with or without a just cause for complaint. The onset and course of this disease are legal matters and have a place beyond the scope of this discussion. The treatment, however, is another matter, and it is to this phase that discussion will be directed.

Treatment may be considered from the standpoint of (1) prevention and (2) specific management. Writing on this subject Regan stated: "Prevention is the best defense against malpractice, and making our ethics practical is the most important factor. The doctor must care for every patient with meticulous attention to the requirements of good practice and he must keep himself in position to prove that the standard demanded by law has been met in every case."

The following preventative measures are axiomatic in the realm of medicine, whether physical medicine or any other branch:

I. Physical equipment:

A. Office impedimenta should be arranged to prevent accidents by stumbling or falling.

B. Radiators and other heating devices should be covered.

C. Exposed wiring in connection with electrical devices should be guarded.

D. Stairs, steps and other hazardous objects should have guard rails.

E. Adequate hoists and steps should be provided to prevent falls when the patient is getting into or onto treatment devices.

F. Lighting should be adequate.

G. Periodic inspection to see that all physical equipment is kept in good order and repair is necessary.

II. Records:

A. Complete and accurate records of the history, examination, diagnosis, treatment, progress and disposition of every case should be kept.

B. Records of consultations and advice to individual patients should be kept.

C. These records should be accurate as to dates, time and places.

III. Personnel:

A. Employees should be tactful and schooled in the wisdom of silence on matters which might create an unfavorable impression.

B. Employees should be properly trained in the application of treatment devices.

C. Employees must learn to investigate all complaints and have the judgment to call the responsible physician when there is question.

D. Employees should assist the patient in all movements and remain within earshot while the patient is under treatment.

IV. Management:

A. Meticulous attention to the requirements of good practice must be given in each case.

B. Experimentation with hazardous equipment should be avoided.

C. The physician should be specific in prescribing treatment to be given by an employee, but should train the employee to use good judgment in carrying out orders.

D. The laboratory should be used when indicated.

E. Care should be used in accepting the judgment of others. It is surprising how often physicians confuse ultraviolet and infra-red ray therapy.

V. Tact:

A. It should be recognized that the sensibilities of an ill person are in a state of imbalance.

B. The physician must remember that the patient is in better position to know what he feels, smells, tastes and so forth than the physician ever can be.

C. A little psychotherapy goes well with any other treatment.

D. "See no evil, hear no evil and speak no evil" should be followed when other members of the medical profession are concerned.

E. It is not enough that the physician is right. He must convince the patient that he is right.

Rationale for Electrodiagnosis and Electrical Stimulation in Denervated Muscle

S. L. Osborne, Ph.D., F.S. Grodins, M.D., Ph.D., Eugene Mittelmann, E.E., Ph.D., W. S. Milne, M.S., and A. C. Ivy, Ph.D., M.D., Chicago. In ARCHIVES OF PHYSICAL THERAPY, 25:6:340, June 1944.

Much confusion exists in regard to the use of electrical stimulation in the treatment of denervated muscle. There is disagreement as to the value of such therapy, although most of the more recent evidence is in its favor. The type of stimulating current to be used in any given case is not well understood. Some time ago we initiated a broad research project with three major objects in mind: (a) to collect the available information on the electrical excitation of normal and denervated muscle and with this as a basis to construct an apparatus suitable for the experimental study of electrodiagnosis and electrotherapy; (b) to study the effect of different forms of electrical stimulation on the rate of atrophy of denervated muscles, and (c) to outline on the basis of experimental studies the requirements for an electrodiagnostic and electrotherapeutic apparatus suitable for clinical use and to establish the best methods for the application of electrotherapy. The last involves the evaluation of such variables as type of current, intensity of contraction, and length and frequency of treatment. The present communication deals with the design of our experimental apparatus and the physiologic principles on which it is based.

Application to Electrotherapy

A. The Production of Tetanus.—Smoothly graded tetanic contractions which closely simulate a voluntary effort can be produced in denervated muscle just as they can in normal muscle. In electromuscle stimulation as it is usually practiced in the clinic, no distinction is made between the types of contraction produced by different forms of current. There are two reasons for stressing this point: (a) normal voluntary contractions are tetanic contractions and (b) the tension developed during a tetanus is greater than that developed during a simple twitch. In regard to the latter point, evidence indicates that vigorous exercise is essential to the production of beneficial results from the electrical stimulation of muscle. We therefore regarded it desirable to produce the type of contraction which is most physiologic and at the same time permits a greater development of tension.

B. Mechanical Properties of Denervated Muscle in Relation to Tetanus.—It is generally taught that in contrast to the brisk twitch response of normal skeletal muscle, denervated muscle responds to stimulation with a slow, prolonged contraction. The nature of this slow response does not appear to be well understood at the present time. Bremer thought that it was a "neuromuscular contracture" similar to that which he demonstrated in normal frog muscle when stimuli of long duration were employed. He also believed that there was, in addition, a minor slowing of the true twitch. Just as in normal frog muscle, the "contracture" in denervated mammalian (cat) muscle was best obtained with currents of relatively long duration. Bremer observed that the contracture component in normal frog muscle was fatigued more easily than the twitch component; the same is true of the slow contraction phase of denervated mammalian muscle (Ravin). Rushton noted a prolongation of the twitch of normal muscle stimulated with currents of long duration and ascribed to it progressive recruitment of additional fibers as the current continued. Recently Doupe has shown that the prolonged contraction of denervated human muscle may or may not be obtained, the result depending on the temperature of the muscle and the duration of the stimulating current. This author attributed the prolonged contraction to a repetitive response to a constant stimulus, so that in effect what is produced is a true tetanic response. The fact that the prolonged contraction is accompanied by action potentials (Doupe and Rosenblueth) is against the contracture theory. For theoretical reasons, one would expect repetitiousness to occur in denervated muscle because it is a tissue with a very slow accommodation. On the other hand, if the prolonged contraction was due to repetitiousness and was a true tetanus, one might reasonably expect the tension developed to be higher than that of a twitch. However, Bremer found that, although the "contracture" could produce considerable shortening in an unloaded muscle, it developed very little tension when contracting isometrically—generally less than 20 per cent of that developed by a maximal twitch. If repetitiousness was occurring, (a) only a small proportion of the muscle fibers were involved, (b) the individual fibers were responding asynchronously at relatively slow rates or (c) there was a fundamental difference in the tension developed by repetitive responses to a constant stimulus and that developed in response to repeatedly changing external stimuli. Recently Skoglund has shown that with very slowly rising stimuli, accommodation breaks down in normal motor nerves and repetitiousness begins to occur. A similar process may well occur in denervated muscle.

The immediate importance of these considerations for us lies in the fact that it is necessary to realize that different types of stimulation produce different types of responses, the nature of some of which is not well understood. It is quite possible that the nature of the response produced has an important bearing on the success or failure of the electrical stimulation of muscle.

Abuse of Rest as a Therapeutic Measure for Patients with Cardiovascular Disease

By Tinsley R. Harrison, M.D., Dallas, Texas. In J.A.M.A., 125:16:1075, Aug. 19, 1944.

Summary

A review of some recent experimental evidence and certain clinical considerations leads to the following general conclusions:

1. Extreme restriction of body movements causes increased mortality in animals with experimental myocardial injury.

2. There is no proof that rest in bed carried out for many weeks after symptoms have disappeared is of value in the physical management of the patient with congestive failure, angina pectoris or myocardial infarction. The available evidence, while perhaps not conclusive, points to the contrary, and more especially so if the recumbent posture is enforced while the patient is kept in bed.

3. From the psychic standpoint there is a definite disadvantage in the enforcement of a rigid regimen after the acute phase of the illness has subsided.

4. Until more definite information is available, the following tentative suggestions are offered for a plan of treatment which obviously requires modification according to the status of the individual patient:

(*a*) Persons with congestive heart failure should be allowed out of bed for several hours a day, as soon as severe dyspnea at rest has subsided.

(*b*) Following myocardial infarction, recumbency should not be prescribed for a longer period than two

to three weeks after the more acute and alarming symptoms have subsided. The recumbent position should not be enforced on patients who are more comfortable sitting. Other things being equal, it would appear wise to allow elderly patients out of bed sooner than younger ones.

(*c*) Rest in bed for more than a day or two at a time probably has no place in the treatment of angina pectoris except in those patients who are especially liable to develop in the immediate future myocardial infarction, as indicated by increasingly frequent and prolonged attacks at rest.

(*d*) In all patients with the severe forms of heart disease activity should be kept below the symptomatic threshold, i. e., should be less than that amount which induces dyspnea or pain.

Early Treatment of Infantile Paralysis

Lt. Cmdr. Herbert E. Hipps (MC), U.S.N.R. and Billie Louise Crook, M. ED. R.P.T.T., Technical Director of Physical Therapy, the University of Texas School of Medicine, Galveston, Texas. In ARCHIVES OF PHYSICAL THERAPY, 25:7:406, July 1944.

The primary purpose of this paper is to emphasize the importance of early physical therapy, especially therapeutic pool treatment, in the care of anterior poliomyelitis. A project on the behavior of muscle, carried out at the Crippled Children's Hospital of Marlin, Texas, by the authors, under a grant from the National Foundation for Infantile Paralysis, will be reported.

Conclusion

The chief significance of this study for persons interested in physical therapy is the evidence provided (1) that muscles which have had no training whatever recover about as well as those which have been kept in casts or at rest for a long period; (2) more important, that patients given early underwater treatment show twice as much improvement as either of the other groups, and (3) that the acute muscular sensitivity will usually leave the muscles within three to five days if the patient is given early underwater therapy in a pool of heavy saline water at 98.6 F.

Other conclusions, which were drawn from the various phases of this study, may be stated as follows:

1. Long paralyzed muscles treated by rest in a relaxed position for six to twelve weeks were much more apt to lose than to gain.

2. Muscles that were graded zero, trace and poor and had been paralyzed as long as three months showed no appreciable gain with physical therapy.

3. Muscles that were graded poor plus, fair and good showed considerable improvement with physical therapy.

4. The age group 6 to 16 showed a greater improvement than the younger and the older group.

5. Patients who received early, careful physical therapy showed much better muscle recovery than those treated otherwise.

The Natural Course of Poliomyelitis: A Report of 70 Cases

Mary S. Sherman, M.D., Chicago. In J.A.M.A., 125:2:99, May 13, 1944.

It was Wickman who first called attention to the high incidence of nonparalytic poliomyelitis, which, after studying 1,025 European records, he conservatively estimated at 25 to 56 per cent of all cases. This group, which varies with the epidemic, obviously affects the recovery rate, and no appraisal of results of any treatment can be made without an accurate statement as to the number of cases which were of this type.

The report of McCarroll and Crego has been widely quoted by the supporters of Miss Elizabeth Kenny as proof that under the "orthodox treatment" only 12 per cent of recoveries can be expected. But the 160 cases reported were all paralytic and therefore the complete recovery of 12 per cent cannot be compared to the recovery rate of a group which includes also the nonparalytic.

In two papers which purport to analyze the 26 cases in Miss Kenny's first Minnesota group there is little agreement. Of the 26, only 10, or 38.4 per cent, are listed as normal after eighteen months. Six of these 10 were either nonparalytic or bulbar patients with no peripheral paralysis. The hospital stay of these patients, some of whom were still institutionalized at that writing, is listed in detail, and, according to the figures presented, averages 179.5 days. The shortest stay was twelve days and the longest eighteen months. It is noteworthy that one nonparalytic patient was hospitalized for ten weeks. This hardly seems to support the claim that the Kenny method is saving of time, money and hospital days.

The Chicago poliomyelitis epidemic of 1943 presented the unusual opportunity of following a group of 70 unselected patients through the entire course of their acute disease and of supervising carefully their subsequent care.

All patients received the same general treatment, which was essentially that required by any acute febrile disease. After a spinal puncture (which was postponed in all bulbar cases and on a few very ill paralytic patients) they were kept at absolute bed rest with as nearly normal a diet as possible and with adequate fluids given parenterally when necessary. They were disturbed only for rapid physical examinations, and often these were done several times daily. These examinations apparently had no effect on the extent or duration of muscle weakness. Bulbar patients were given nothing by mouth, had constant suction and oxygen via nasal catheters, postural drainage and all fluids parenterally. The respirator was used only for intercostal weakness, which was significant in 3 cases. Fifty-three of the patients received convalescent or adult blood serum in accordance with the program of the Illinois State Public Health Service. No specific effect from the administration of the serum was observed.

"Kenny" packs, splints or special apparatus were not used. As "spasm" and stiffness of the back and hamstrings appeared to be present in all cases, and since they seemed of no significance except as symptoms, no treatment was directed toward them. These manifestations disappeared spontaneously in every case within a few weeks.

Summary

Of a group of 70 patients with acute anterior poliomyelitis, which except for supportive therapy was allowed to run its natural course, 10 per cent have enough residual weakness to require braces or future surgery, 72.8 per cent have no residual weakness or such slight weakness that it is barely detectable, and 8.6 per cent have functionally significant weakness which does not require further therapy and which does not constitute a handicap to a normal life. There were six deaths (8.6 per cent). The average hospital stay, excluding the fatal cases, but including readmissions for supervised physical activity, was 17.9 days.

The Rocker Walking Iron

In BRITISH MEDICAL JOURNAL, 4347:592, April 29, 1944.

Capt. G. E. Foster, M.D., C.M. (McGill), graded surgeon, R.A.M.C., writes from the British Military Hospital, Bermuda:

A rocker walking iron is described by Major T. T. Stamm in the British Medical Journal (July 3, 1943). I have used, with every satisfaction, a different type, as described below:

Description of Apparatus

(1) An iron strap, 30 in. x 1 in. x ⅛ in. to $\frac{3}{16}$ in. is bent to the shape shown in Fig. 1. Heating facilitates this, but is not essential.

(2) The rocker surface is covered to prevent slipping. A piece of old bicycle tire is suitable and may be laced on. Alternatively, a leather strap may be riveted on.

(3) An unpadded plaster cast is applied in the usual way. The posterior slab should be substantial (15 to 18) layers.

(4) When the cast has hardened, a single plaster bandage suffices to secure the iron (Fig. 2A).

(5) The well foot should be fitted with a built-up wooden sole screwed on to a canvas shoe in order to equalize the leg length (Figs. 2B and 3).

Advantages

(1) The rocker, as stated by Major Stamm, unquestionably "ensures a natural heel-toe action in walking."

(2) The type I describe needs no bolting to a sole plate, and the long upright part distributes the weight over more of the cast as well as stabilizing the rocker. The appliance remains firm and secure after several weeks' service, and the same iron may be used repeatedly.

(3) The built-up sole on the well foot greatly facilitates walking.

This particular rocker iron has been used in the U.S.A. and Canada for several years. The type of built-up sole I mention is standard in some U. S. service hospitals.

Peripheral Vascular Diseases

Robert Schwartz, M.D., Veterans Administration, Pittsburgh, Pa., and Harry Warshawsky, M.D., Veterans Administration, White River Junction, Vt. In MED. BULL. OF VETERANS ADMINISTRATION, 20:4:389, April 1944.

At Veterans' Administration Facility, Pittsburgh, the following printed instructions are given to every patient with peripheral vascular disease before he is discharged from the hospital:

1. Keep warm. Avoid crowded places.
2. Take great care that the foot is not injured.
3. Wear wide-toed shoes which cause no pressure, and have adequate arch support. Use thick, loose socks. Use shoes made of soft leather and without box-toes.
4. Always keep your feet warm. Use woolen socks or wool-lined shoes in winter and white cotton socks in warm weather. Use a clean pair of socks each day.
5. Do not wear circular garters.
6. Do not sit with the knees crossed.
7. If the weight of bedclothes is uncomfortable, place a pillow to hold the bedclothes above feet.
8. Use loose fitting bed socks instead of hot-water bottles. Do not use electric heaters or any other form of mechanical heating devices.
9. Do not apply any medicine to the feet without directions. Particularly, never use tincture of iodine, lysol, cresol or carbolic acid.
10. Wash the feet every other day with warm water and neutral face soap. Dry thoroughly, especially between toes, with a clean soft rag, by mopping—not rubbing.
11. Apply rubbing alcohol (70 per cent) and allow the feet to dry thoroughly. Then apply a liberal amount of vaseline or toilet lanolin and gently massage the skin of the feet.
12. If feet are moist use powder.
13. Before cutting nails, soak feet in warm (not hot) water for 10 minutes to soften nails. Cut straight across only in very good light. Do not cut down into the corners. Do not cut them close to the flesh.
14. Do not cut corns or callouses.
15. Proper first-aid treatment is important. Consult your physician for any redness, blistering, pain or swelling; in-growing toenails; trouble with bunions, corns or callouses; or itching and scaling between toes.
16. Eat plenty of green vegetables and fruit in an otherwise well-balanced liberal diet, unless you have been ordered to follow a special diet.
17. Do not use tobacco in any form.
18. Do not eat sour rye bread.
19. Carry out the exercises prescribed by your physician exactly as you were taught to do them in the clinic. Do them regularly and faithfully.
20. Avoid excitement and emotional strain.
21. Drink freely of water and use large amounts of salt.
22. Indulge in hot drinks frequently.

Physical Methods of Treatment

Various methods of applying heat are available. De-Takats feels that heat should be limited to the root of a limb. The sitz bath is an ideal method of relaxing vasomotor tone in a limb. The patient sits in 12 inches of water at 100 F. for 20 to 30 minutes. The effect extends high enough for collateral vessels from the trunk and femoral arteries to be activated. Reflex vasodilatation may be brought about in the lower extremities, using the method of the Gibbons-Landis test. The hands and forearms are immersed in warm water (115 F.) for 20 minutes, and this may be repeated two to three times daily. The simple method of wrapping a limb in cotton to prevent heat loss is useful at times.

When bed cradles are used, the surrounding environment should approximate the normal surface temperature of the skin, 93 to 95 F. Thermostatically controlled heat cradles are ideal; but, if they are not available, an ordinary 15-watt bulb placed in the socket of the cradle will insure against the temparture rising too high. The improper use of heat in the past often has done more harm than good. Abnormal degrees of heat (above 100 F.) produces excessive metabolic demands with which the impaired circulation cannot cope. There actually have been cases of severe ulceration or gangrene precipitated by such measures. Any form of baking with strong bulbs or infra-red lamps is to be avoided conscientiously. Likewise, diathermy or short wave therapy directly to a limb is to be condemned unless properly controlled. The technic of applying diathermy to the lumbar region has been found very effective by some observers in producing increased blood flow in the lower limbs.

Baths have the double function of relaxing vasomotor tone and washing away adherent crusts. Here again the temperature of 95 F. should not be exceeded. In the presence of open lesions tincture of green soap may be

added to the water. Whirlpool baths add the extra benefit of a mild massaging action by the circulating water. Boric acid soaks are very useful when ulcers are present. Paraffin baths have been used by some. This is rather a troublesome method of treatment, but has the advantage of prolonged heat retention. The use of contrast baths, where a limb is alternately immersed in warm and cold water, has been largely discarded. There is considerable danger of pain, thrombosis or prolonged vasospasm resulting from the cold phase of this treatment (60 to 70 F.).

Gentle massage has its place in the treatment of peripheral vascular disease if it is properly administered. The presence of active infection, however, contraindicates its use.

Suction-pressure therapy, the original Pavex treatment, is very widely used for peripheral vascular diseases. One objection to this modality lies in the necessity for making the cuff about the thigh or arm airtight. Cases of uncomplicated arteriosclerotic gangrene, acute embolism or thrombosis, and frostbites are those which respond best to Pavex therapy.

The use of intermittent venous occlusion is finding wide application in the treatment of peripheral vascular diseases.

Postural or Buerger's exercises consist of alternately elevating and lowering the limbs in order to encourage collateral circulation.

A form of mechanized treatment recently has been devised by Sanders—the oscillating bed. It accomplishes the same purpose as the postural exercises, by permitting the patient to lie passively while a motor alternately elevates and lowers the bed.

Mecholyl iontophoresis is a recently developed method of treatment that has found great usefulness in cases of frostbite, scleroderma, Raynaud's disease, acrocyanosis and thrombophlebitic induration.

The Future Development of Physical Medicine

George Morris Piersol, M.D., Director, Center for Instruction and Research in Physical Medicine at the University of Pennsylvania, Philadelphia. In ARCHIVES OF PHYSICAL THERAPY, 25:8:455, August 1944.

Even a cursory survey of the subject makes it apparent that in fields of industrial medicine, geriatics, arthritis, diseases of blood vessels, diseases of the nervous system, including infantile paralysis, as well as in problems of rehabilitation, physical medicine is destined to play an outstanding role.

If physical medicine is to come into its own, if it is to be prepared to meet the demands that are rightly being made on it, a whole-hearted effort must be made by those interested in physical medicine and by those charged with the training of physicians and with the development of scientific medicine to remedy this unfortunate state of affairs. In an effort to correct this situation several approaches have been suggested; these fall under three main heads: (1) education, (2) research and (3) publicity.

Education

A concerted attempt should be made to introduce into the undergraduate curriculum adequate instruction both didactic and practical to the end that medical students will receive training in at least the fundamentals of physical medicine. Education in physical medicine should not cease with graduation from the medical schools; it should be carried into the hospitals so that interns and residents may be made acutely aware of the existence of departments of physical medicine. In institutions where the department of physical therapy is in charge of lay technicians, the physicians, including the interns, should be sufficiently well informed to be able to prescribe the specific type of treatment desired and not casually place this responsibility on the shoulders of lay persons, who, however skilled they may be, should not be asked to assume the responsibility for prescribing treatment.

Continued interest must be directed toward the extension and improvement of courses for physical therapists. In this field, the present demand far exceeds the available supply. Under the guidance of the Council of Physical Medicine of the American Medical Association and a certain number of state boards of licensure and practice, technicians' courses have distinctly improved in recent years. These courses need to be strengthened by the introduction of more basic science and more purely cultural subjects. In all probability they require lengthening. The well trained technician should bring to his or her work not only highly developed technical skill in physical medicine but something of the attitude of a trained psychologist, a social service worker and an occupational therapist.

Research

In spite of many sporadic efforts in the past, it must be admitted that at present exact information about the effects of the various physical agents used in physical therapy is much too meager and uncertain. The basic physiology on which many of the simpler forms of physical therapy depend for their results, for example massage and the application of various forms of heat, all deserve further elucidation. A useful field for investigation is presented by that ill defined and vaguely understood group of periarticular and muscular conditions variously referred to by such terms as myositis, fibrositis and even bursitis, all of which form no inconsiderable part of the material which passes through a department of physical medicine. In spite of the vast amount of money and effort that has been devoted to the study of the arthritides, too many aspects of this greatest of all groups of disabling diseases still await solution. Much work is yet to be done on peripheral vascular disease, and even poliomyelitis, which occupies such a prominent place in the popular imagination, still presents numerous aspects that are in need of solution.

Effective research in physical medicine cannot be conducted by any single group. Its ultimate success will depend on the effectiveness of a coordinated effort between clinicians, trained technicians and investigators in the field of basic medical sciences.

Refrigeration Treatment of Peripheral Vascular Diseases

Richard L. Egan, M.D. From the Department of Medicine, the Creighton University School of Medicine, Omaha, Nebraska. In NEBRASKA STATE MEDICAL JOURNAL, 29:7:218, July 1944.

Our concept of the time and place for the application of heat and of cold in the treatment of vascular disease must be revised in the light of recent research. Heat is sometimes a dangerous therapeutic agent.

Refrigeration combined with measures to combat spasm of collateral arterial circulation may safeguard against or minimize gangrene resulting from arterial occlusion. It is a valuable agent in the preparation of the poor risk patient with vascular disease for lifesaving surgery and when used as an anesthetic procedure has valuable advantages over conventional methods.

Meeting an Epidemic of Infantile Paralysis

By Coralynn A. Davis, R.N., Chicago. In PUBLIC HEALTH NURSING, 36:7:332, July 1944.

During the 1943 poliomyelitis epidemic in Chicago, the orthopedic nurses of the Visiting Nurse Association visited the homes of more than one thousand patients afflicted with the disease. Six hundred and twenty-seven patients received treatments at regular intervals in their homes, 209 patients were treated during the quarantine period. A total of 11,791 treatments were given by our nurses during 1943, of which 1,116 were given during the acute stage.

The time spent by the nurse in giving the first treatment in the home was usually more than two hours. If the patient was quarantined at home, the mother or some responsible member of the family who was to give care to the patient was instructed in communicable disease technic. When hot packs were ordered, the equipment in the home was used and supplemented as needed. Many families worked out devices to make the treatment more convenient and easier for the one applying the hot packs.

In each home the mother was assisted in planning her work so that the packs and care of the patient would be done systematically. Written instructions were left in the home to make the care of the patient easily understood.

As the number of patients to be treated in the homes increased, the nurses learned to plan the work in the home more efficiently. The family assumed more responsibility in the care of the patient and many parents were taught to give passive movements at first, and later some of the active exercises. In each case the mother demonstrated that she could give the exercises as shown.

During the past few months, patients who have been hospitalized for long periods have returned to their homes for further treatment. These patients are also taught to walk with apparatus and have to be adjusted to their home surroundings again. Families of these patients also are taught to give treatment.

Ten of the nurses on the staff of the Visiting Nurse Association are physical therapists, five have been trained in orthopedic nursing while working on the staff, four of these during the recent epidemic. The combined efforts of this group of nurses working faithfully and loyally together have made it possible to give adequate treatment to this large number of patients, many of whom will require treatment and instruction for many months to come.

The Abuse of Rest in Bed in Orthopedic Surgery

By Ralph K. Ghormley, M.D., Rochester, Minn. In J.A.M.A., 125:16:1085, Aug. 19, 1944.

Among orthopedic surgeons the importance of rest as a therapeutic measure has been emphasized since the beginning of this specialty. It is generally recognized that Hugh Owen Thomas was one of the forerunners of orthopedic surgery. In his book "Menders of the Maimed," Sir Arthur Keith said, "It was the custom of John Hunter to prescribe 'Rest' as a routine measure in the treatment of disablements of the motor system of the human body. After him came John Hilton, who regarded rest as the most powerful aid which the surgeon could bring to the aid of disordered tissues. Hilton elaborated the means of securing rest into a system; but the man whose principles and practice we are to describe here made rest his creed and ritual. Hugh Owen Thomas believed that an overdose of rest was impossible. To use the expression which he never tired of repeating—Rest must be 'enforced, uninterrupted and prolonged.'"

Thus one may see that the creed prescribed for orthopedic surgeons of a generation or more ago called for rest in considerable quantities. This may have been and probably was carried to an extreme beyond reason.

From the standpoint of the orthopedic surgeon, one effect deserves emphasis. This effect is atrophy. Atrophy of muscles, articular structures, bone and skin results from prolonged rest and must be regarded as a pathologic condition. The actual pathologic physiology of this condition is not well understood. Certainly there are other factors than simple disuse that contribute much to certain types of atrophy, but the effect of disuse alone is sufficient to lead to a good deal of disability. If one opens a thigh to remove fascia for surgical procedures one will be struck by the smooth surfaces of contact between the fascia and underlying muscle. These surfaces fairly glisten and are not adherent; obviously, smooth, gliding movements between the muscle and fascia are not impeded. On the other hand, when one opens a thigh that has been at rest either in a cast or in a splint or as a result of rest in bed one often finds that the fascial surface as well as the surface of the underlying muscle is dull and does not glide; oftentimes many small adhesions have formed between the muscle and the fascia. This seems mainly the result of disuse and inactivity or, in other words, an alteration from the normal physiology of the involved region. I often have thought that, if such changes take place between all muscles and their fascial coverings or gliding envelops, they must have a considerable effect in producing limitation of function in the skeletal system. To a lesser extent and to a less pronounced degree the same effects, as a rule, may be seen in joints which are not used and in cases in which rest in bed is employed; however, bony atrophy may become symtomatic and even progress to the point where pathologic fractures may take place. A similar condition may take place in the skin, and the dangers of decubitus ulcers in bedridden patients are well known. Much of this atrophy can be avoided by systematic massage and exercises in cases in which for some reason or another, it is necessary to remain in bed for a long time. Too often, however, such measures are overlooked, forgotten or neglected to the certain detriment of the patient.

Comment

I have tried to point out that orthopedic surgeons, realizing the detrimental effects of complete rest in bed, have over the years succeeded in shortening the periods of such confinement in their prescribed treatment for various conditions. Efforts to improve treatment toward this goal continue, and one will see more advances along this line in the future.

Physical Fitness in Industry

W. P. Jacobs, LL.D. In J.A.M.A., 125:12:831, July 22, 1944.

It is easy for anyone to foresee that physical fitness in industry will increase production, reduce cost of production, improve individual productivity and earning power, assure greater happiness, longer life and better worker morale and perhaps afford a number of other plausible advantages.

Physical fitness as it applies to industry involves a highly technical analysis in application, and it produces its best results when undertaken under the influence of

the medical profession. Nor is the application of the theme a group problem, as would be believed at the first glance. It is strictly an individual problem. It is the life of the individual which must be made more fit, and the formula required by each individual differs from the other. One man or woman can safely adopt one type of sport or other type of recreation for building of physique, while another may find it necessary to select an entirely different method.

The accomplishments so far in this field can be largely credited to the members of the medical profession who have been working so faithfully in preserving the health of the workers in the industries of America. The future success of physical fitness in industry will necessitate the combined capacity of the medical profession of America. It is a highly technical and highly specialized job which involves medicine, psychology, sports, physical education, community planning, leadership and in fact all phases of human life. The program of physical fitness in industry merely offers a vehicle through which the skilled services of the physicians of the country may be broadened in scope and in contribution, in an opportunity for the practical popularization of preventive medicine as well as curative. While the responsibility rests on the individual worker himself, Doctors of America, the opportunity is yours.

Evaluation of the Kenny Method in the Treatment of Chronic Infantile Paralysis

Burton Chance, Jr., M.D., Philadelphia, Pa. In THE PENNSYLVANIA MEDICAL JOURNAL, 47:10:978, July 1944.

It is the impression of those who conducted this trial of the Kenny concept of treatment of infantile paralysis that:

1. The symptoms described in this concept exist.
2. That the deformities and disabilities which occur in chronic cases can be effectively treated if the cases are carefully selected because of specific symptoms.
3. That poor results will be obtained if the cases are not well selected or if the physician and physical therapist are not well grounded in the knowledge of the concept.
4. That complete prolonged paralysis of large muscle groups of antagonistic muscles will not be helped either by Kenny or any other type of physical therapy now in use.

The Army Rehabilitation Program for the Blind and the Deafened

Brig. Gen. Charles C. Hillman, U. S. Army. In J.A.M.A., 125:5:321, June 3, 1944.

Two hospitals, Dibble General Hospital, Menlo Park, Calif., and Valley Forge General Hospital, Phoenixville, Pa., have been especially equipped and staffed as ophthalmic centers. Here programs of social rehabilitation are initiated and carried out simultaneously with medical or surgical treatment that may be required. To insure that blinded soldiers shall have the benefit of the most expert care at all times, the War Department requires that each such casualty occurring in the United States or returned from overseas shall be reported to the Surgeon General, in whose office the case is then followed until medical and surgical treatment and social rehabilitation are completed and the patient is transferred to the Veterans Administration for vocational training.

Three hospitals have been designated for special care of the deaf. These are the Deshon General Hospital, Butler, Pa., the Borden General Hospital, Chickasha, Okla., and the Hoff General Hospital, Santa Barbara, Calif.

The Abuse of Rest as a Therapeutic Measure in Surgery: Early Postoperative Activity and Rehabilitation

By John H. Powers, M.D., Cooperstown, N. Y. In J.A.M.A., 125:16:1079, Aug. 19, 1944.

Rest, as a therapeutic measure, is fraught with hazard. Prolonged periods of recumbency in bed are anatomically, physiologically and psychologically unsound and unscientific. Conversely, early restoration of medical and surgical patients to normal life is an essential feature of modern convalescent supervision. Prompt postoperative activity and walking provide manifest, safe and agreeable modifications in customary convalescent care by which ready rehabilitation may be achieved in the realm of surgery.

The desirability of such a program for patients of advanced years has long been recognized; surgical wounds heal firmly even though early postoperative activity is encouraged. Infants and young children cannot be kept quietly at rest in bed after operation, yet postoperative hernias are not common. Utilization of this knowledge in the management of patients between the extremes of life promotes an equally uneventful convalescence. Early rising from bed and walking preclude the protracted period of inertia which traditionally follows in the wake of surgery and encourage the prompt resumption of normal activity.

Conclusion

Prompt restoration of surgical patients to normal life is an essential feature of convalescent supervision. Early postoperative activity and walking provide manifest modifications in customary convalescent care by which the process of reconditioning may be largely eliminated and early rehabilitation achieved.

The indications for such a program are manifold; no contraindications are apparent in this study of 100 consecutive cases.

The Scalenus Anticus Syndrome

Major Roy L. Swank and Major Fiorindo A. Simeone, Medical Corps, Army of the United States. In ARCHIVES OF NEUROLOGY AND PSYCHIATRY, 51:5:442, May 1944.

Conclusions

The cases of 15 patients with a condition diagnosed as the scalenus anticus syndrome are classified into two main groups: those of a superior type due to compression of the upper roots of the brachial plexus, principally of the sixth and seventh cervical nerves, by the tendons of origin of the scalenus anticus muscle, and those of an inferior type, due to compression of the lower roots of the brachial plexus, principally of the eighth cervical and the first thoracic nerve, by the same muscle near its insertion.

The mechanism of compression is thought of as a vise, the ventral jaw of which is the scalenus anticus muscle. The structure forming the dorsal jaw varies. Section of the scalenus anticus muscle removes the ventral jaw of the vise and renders the vise ineffective.

The etiologic factor in most cases seemed to be hypertrophy of the scalenus anticus muscle. Strenuous exercise and overactivity of the respiratory muscles appeared to be the most important causative factors in this hypertrophy. In a few cases the syndrome may have been precipitated by "myositis" or "myalgia."

Seven of the patients were relieved by a regimen of rest, posture and physical therapy; 8 (2 with a bilateral syndrome) were relieved by anterior scalenotomy.

The Principles of Reeducation in Breathing

Basil Kiernander, M.B., B.S., M.R.C.P., D.M.R.E., Assistant Physician, Department of Physical Medicine, Radcliffe Infirmary, Oxford; Honorary Consultant in Physical Medicine, Horton General Hospital, Banbury, and Abingdon Hospital; Flt. lt., R.A.F.V.R. and Lilian B. Pollard, T.M.M.G., Senior lecturer in Physiotherapy, University of Toronto. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE AND INDUSTRIAL HYGIENE, March-April 1944.

Although breathing is a vital function of the body it is uncommon to find that the mechanism provided for that purpose is used to its fullest extent. Like most body mechanisms, the respiratory apparatus works best with the animal in the four-footed position. When man adopted the upright posture, this apparatus came into conflict with the force of gravity and for this it is ill-fitted. The result is apparent in the faulty, incomplete respiration of the so-called normal individual. Even a group of young recruits for the Forces provides comparatively few examples of a habitually full easy respiration. That is to say, in most cases the vital capacity (the maximum intake of oxygen and the maximum output of carbon dioxide) is reduced, with a corresponding impairment of all bodily functions. It is not too much to claim that, in the absence of any organic disease, the inspiring outlook of those who are "on top of their form" can only be acquired when the posture is balanced and the respiratory mechanism is functioning to its maximum.

Respiratory Control

In giving instruction in breathing exercises it is necessary to remember that several deep respirations will disturb the carbon dioxide content of the blood upon which the respiratory control so largely depends. It is wise, therefore, to intersperse the deep respirations with the mobility and abdominal exercises so that a further supply of carbon dioxide is forthcoming and the balance maintained.

Treatment of Acute Knee Injuries: With special attention to the "weak knee" syndrome

Chalmers R. Catt, Lieutenant Commander (MC) U.S.N. and G. Edmund Haggart, Senior Surgeon (R) U.S.P.H.S. In UNITED STATES NAVAL MEDICAL BULLETIN, 62:4:796, April 1944.

Summary

Knee joint disability during Naval service, exclusive of combat injuries and fractures, frequently is encountered.

The anatomy and recent concepts of the mechanics of the knee joint are reviewed, with particular reference to the "weak knee" syndrome.

A program for conservative management of the acute traumatic knee, which we believe will prevent disabling "weak knee" following injury, is outlined.

Phototherapy of Burns

P. M. Leonenko. In AMERICAN REVIEW OF SOVIET MEDICINE, 1:4:343, April 1944.

Properties of the ultra-short rays of the quartz lamp are well known. Professor Rakhamanov, basing his conclusions on his own experiments, described the biologic changes in the wound under the action of ultra-short rays as follows:

Growth of epithelium is stimulated, mitosis activated, and absorption of inflammatory products is hastened; the process of differentiation of the connective tissue into granulations is accelerated; proliferation of nerve fibers is noted around the wound as well as in the wound itself.

All the factors which contribute to the successful treatment of burns and to rapid healing of the wound are thus summarized. Since the ultra-short rays of Bach's lamp possess analgesic and bactericidal properties, phototherapy was added to the open method of treating burns.

Conclusions

1. Treatment of burns by ultraviolet and heat rays may be used in addition to the open method.
2. Preliminary treatment with a quartz lamp reduces pain to a considerable degree and serves to combat shock.
3. The ultraviolet rays, falling on the exposed surface, reach the capillary network, are absorbed by the blood, and stimulate the protective mechanisms of the body. The general condition of the patient is improved to a considerable degree; the temperature begins to fall; appetite and sleep improve.
4. Local regenerative processes are activated by phototherapy and contribute to rapid healing of the wound without formation of scars (cosmetic effect).

Treatment of Undisplaced Fractures at the Ankle Joint

Lt. Col. Mather Cleveland, Major Leon J. Willien and Major Patrick C. Doran. In U. S. ARMY MED. BULL., June 1944.

The impression of the officers of the orthopedic section was that the group of nonimmobilized cases recovered more rapidly than did the immobilized ones. The comparison was based solely on number of hospital days necessary for complete rehabilitation. All patients in their convalescent phase had the same treatment; namely, physical therapy first and, secondarily, physical therapy plus convalescent drill. It was felt that the drill was the more effective for soft-part rehabilitation and furnished the test of fitness for duty.

This section feels that the nonimmobilization treatment for this type of fracture is to be recommended because control can be exercised over the patient. The chief reason for recommending this treatment is the saving in hospital days and consequent earlier restoration to training or duty for the soldier.

Practical Application of Physical Therapy in Medicine

Walter J. Zeiter, M.D., Cleveland, Ohio. In SOUTHERN MEDICAL JOURNAL, 37:7:382, July 1944.

The importance of physical therapy in the tremendous task of rehabilitation has been recognized both by physicians in the armed services and in civilian practice. The Army, Navy, and Veterans Administration have enlisted men qualified in this specialty and have also assigned men for special training to become directors or medical officers in charge of physical therapy departments.

Summary

Physical therapy is assuming ever-increasing importance in the practice of medicine. Every hospital should have a physical therapy department available for the general practitioner and the specialist. It should be under the direction of a physician and staffed by qualified technicians. Physical therapy can be prescribed in many simple forms, which are of value to the patient, in addition to those treatments carried out in the physical therapy department. Physical therapy may be used alone in the treatment of disease, but more often it is a valuable adjunct to other forms of treatment.

Treatment of Bronchial Asthma by Intensive Breathing Therapy

By H. J. Weiser, M.D., Tel-Aviv, Palestine. In ARCHIVES OF PHYSICAL THERAPY, 25:8:461, Aug. 1944.

Summary and Conclusions

Intensified breathing therapy consists of massage, rhythmic compressions of the thorax and breathing exercises. Intensive gymnastics are of special importance. These include sports (boxing, jujutsu, calisthenics) associated with regulated breathing. The exercises must be performed daily over a period of months or even years. Dyspnea is produced by physical strain during each treatment, but with the aid of the acquired technic of respiration it is soon "breathed away." The patient learns how to master dyspnea by concentration and regulation of respiration. Courage training, boxing, apparatus gymnastics and increased efforts during the course of treatments, increases self confidence in the asthmatic patient.

Intensified breathing therapy should be supervised by the physician and not left to the layman.

The vital capacity, expiration time and breathing span were always considerably increased during the course of treatments.

The absolute value for vital capacity cannot be taken as a criterion for a prognosis.

Prognostic conclusions can be drawn from curves derived from the vital capacity and expiration time measured during each treatment.

In the study reported, the minimum time of observation after treatment was twelve months. It was possible to keep 13 among 39 juvenile asthmatic patients free from attacks; they were under observation for three and one-half years. The disease in 10 of these 13 had lasted for more than two years before the treatment was instituted. Ten of the 29 children continued to show improvement. Six remained unaffected.

Of 10 asthmatic adults, 1 was freed of attacks, 5 improved and 4 were not affected.

Physical Fitness:: Its Evaluation and Significance

J. Roswell Gallagher, M.D., and Lucien Brouha, M.D. In J.A.M.A., 125:12:834, July 22, 1944.

It is seen that in order to test dynamic fitness, which we define as the capacity to perform strenuous exercise and recover from it, the test itself must be strenuous. Whether a treadmill, an ergometer bicycle or the more simple step test is used is not important as long as the exercise requires no special skill, utilizes the large muscle groups and gives the heart and lungs so much work to do that a "steady state" cannot be maintained. From tests involving work of this nature, a "recovery index" can be derived. This index is based on the principle that the rate at which the heart decelerates after strenuous exercise provides a means of extimating dynamic fitness. That this assumption is true is demonstrated by the improvement of the index from week to week during a period of training, by a reduction of the index after breaking training, under the stress of inadequate diet or after an acute illness, and by a subsequent gradual rise on resuming exercise or shift to a proper diet.

A simple procedure, the step test, is adequate for reasonably accurate estimation of the recovery index. Slight variations in technic have been devised to make the test suitable for high school boys, high school girls, college men and college women. For men the test consists in stepping on and off a platform 20 inches high thirty times a minute for no longer than five minutes, a period shown by experience to be adequate for adults. Younger boys and girls exercise only four minutes on a lower platform. The heart rate is counted for thirty seconds one, two and three minutes after exercise has ceased, and the recovery index is calculated by dividing the number of seconds of exercise by the sum of these three heart rates. The higher the score the more fit the individual.

The Treatment of Poliomyelitis

William Benham Snow, M.D., New York, N. Y. In THE JOURNAL OF PEDIATRICS, 25:1:24, July 1944.

Summary

1. This paper is broad in its concept, avoiding, as far as possible, present controversies regarding the treatment of anterior poliomyelitis.

2. A safe and thorough outline for the complete treatment of anterior poliomyelitis is given.

3. The particular problems presented in each of the four stages of anterior poliomyelitis are discussed, and suggestions given for the treatment in each stage.

4. The physical therapy aspects have been carefully considered in the subacute and convalescent stages of anterior poliomyelitis, when physical therapy must play the most important role.

5. My conclusions herewith set down are based upon more than fifteen years of experience in institutional physical therapy.

6. For three years I have had opportunity to investigate Sister Kenny's treatment in operation in a children's hospital, in a general hospital, and in an orthopedic hospital in New York City.

7. In writing this paper, I have given due consideration to the previously accepted "methods" of treating anterior poliomyelitis, to the contributions of Sister Kenny to the subject, and to recent researches.

8. I present this paper as representing the sum total of my opinions regarding the treatment of anterior poliomyelitis as of this date. If treatment is carried out as outlined, a maximum of function should be salvaged to the anterior poliomyelitis patient.

Getting Patients Out of Bed Early in the Puerperium

Morris L. Rotstein, M.D., Baltimore. In J.A.M.A., 125:12:838, July 22, 1944.

One hundred and fifty patients were allowed up on the third or fourth day post partum. The patients when allowed to get out of bed early feel much stronger and are better equipped to carry on their routine duties at home than those kept in bed the usual ten or twelve days. Involution of the uterus was accelerated and uterine prolapse was not encountered. Morbidity was not increased and the healing of episiotomy wounds was not affected by early rise post partum. No cases of thrombophlebitis occurred, and early post partum activity lessens the hazard of such a complication occurring. It gives us a means whereby we can increase our turnover per bed in the maternity service.

The Effect of Heat Produced By Short Wave Diathermy on the Activity of Muscle

W. W. Tuttle, Ph.D., and Lucille Fitts, M.A., Iowa City, Ia. In THE JOURNAL OF LABORATORY AND CLINICAL MEDICINE, 29:6:613, June 1944.

Conclusions

The effect of the application of short wave diathermy to the intact gastrocnemius muscle was investigated. The data show that all periods of the form curve of contraction were significantly shortened by the application of heat. Although all periods were significantly shortened, the period of relaxation was changed most.

Rheumatism and the Menopause

Francis Bach, D.M., Consultant in Rheumatic Diseases, London County Council; Assistant Medical Officer in Charge, Electrotherapeutic Department, St. Thomas's Hospital; Sector Consultant in Physical Medicine, E.M.S. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE AND INDUSTRIAL HYGIENE, 7:3:88, May-June 1944.

The clinical picture of chronic gout may closely resemble the rheumatoid and osteoarthritic types of arthritis.

It is the sick person who must be treated rather than the process.

Treatment of the menopausal symptoms.—This is essential. Thyroid extract in the form of dry thyroid, ½ grain twice a day, is of value when there is no evidence of hypertension.

Stimulation of the pelvic organs and increase of the blood supply, possibly to the ovary itself, by means of intrapelvic diathermy, with a belt and vaginal electrode, or application of shortwave therapy to the pelvic area twice a week for a period of from four to six weeks is of value.

General measures.—Attention to the feet, for example removal of corns on the plantar or dorsal area of the toes, or the provision of suitable shoes with instep supports, metatarsal pads or straight inner-sided shoes, with the heels raised on the inner side and prolonged forwards may be advisable. Physical measures applied to the feet in the form of faradic foot baths or flat foot exercises are important.

To improve the general circulation in those patients who are obese and have a raised blood pressure, aeration baths, carbon dioxide foam, brine and pine baths, general massage and general light treatment may be given.

Local measures.—In the treatment of localized panniculitis, histamine, ionization and ultra shortwave therapy are of undoubted value. If flexion deformity of the knees and partial subluxation has appeared, careful manipulation of the affected joints and the use of plaster of Paris casts should be undertaken.

Public Health Nursing in the 1943 Polio Epidemic

By Jessie L. Stevenson, R.N., New York City. In PUBLIC HEALTH NURSING, 36:7:336, July 1944.

A review of services given by public health nurses in areas where epidemics of infantile paralysis occurred in 1943 may help nursing agencies in other communities to understand the problems presented and to plan for similar outbreaks.

Many examples have been reported concerning ways in which community agencies worked together to meet the nursing needs of the emergency. In Oklahoma the State Department of Public Health sent one nurse from each local health department to spend 5 or 6 days on the hospital wards. This plan not only supplemented hospital service but prepared one public health nurse in each locality to teach the mother when the patient was discharged.

The use of physical therapy in the acute stage of infantile paralysis has created a new problem in isolation hospitals since physical therapists are usually not employed on the staffs of these institutions. To make this important service available, these workers had to be borrowed from other agencies in the community or elsewhere.

Although efforts were made to hospitalize patients during the acute stage insofar as possible, public health nurses in many localities gave and taught nursing care in the home both during and following the acute stage. The shortage of nurses and physical therapists with preparation in newer technics of treatment was acute and the situation would have been more critical if some communities had not prepared in advance. The National Foundation for Infantile Paralysis and its local chapters financed training for more than 300 physical therapists and a considerable number of nurses received aid for short courses.

In many instances hospital and public health nurses without physical therapy training were taught how to carry out muscle stimulation and passive range of joint motion. These technics also were taught to parents. Those who participated in these procedures had the opportunity of giving a return demonstration and of having frequent supervision from the physical therapist.

Plans to meet nursing needs in epidemics of infantile paralysis should be made as a part of the total community plan. Since control of communicable disease is a function of the health department, it is logical to expect the health officer to assume leadership in the total plan. Because care of infantile paralysis may require long-term treatment, plans for care in any one stage of the disease cannot be made without consideration of resources and personnel needed for treatment in all stages.

The 1943 epidemic has given evidence that the public health nurse has a very important part to play in meeting epidemics of poliomyelitis. She will have an even more important part in future epidemics as she realizes more fully the possibilities in increasing correlation of agency services and in utilizing to its fullest extent, community interest and cooperation.

Physical Rehabilitation and the Department of Physical Medicine in a Naval Convalescent Hospital

Lt. Cmdr. Glenn E. Drewyer, MC-V (S), U.S.N.R. In ARCHIVES OF PHYSICAL THERAPY, 25:7:436, July 1944.

Physical medicine is being utilized at present by the United States Naval Medical Corps in two categories, the general hospital and the convalescent center. It is to be hoped that in the near future complete departments will be added to the mobile units. Observation has shown that the sooner the disabled can receive physical measures for rehabilitation, the more quickly they are returned to duty. Newman has said, "No hospital can be rated as a modern institution, capable of rendering complete service to the disabled, without a well-equipped and organized physical therapy department."

The practice of physical medicine in a convalescent hospital, although consisting of the same basic procedures, varies considerably from that used in a general hospital. This is due to the type of patients treated and to the necessity for the use of physical medicine in its broader sense. In reality, it would be better to classify the convalescent hospital as a physical rehabilitation center, since this title more aptly designates the over-all plan of treatment for the complete rehabilitation of the disabled sailor.

Summary and Conclusion

The department of physical medicine and its relation to the United States Naval Convalescent Hospital, Glenwood Springs, Colo., is described. The plan adopted offers a concerted, coordinated effort, so individualized as to accomplish as quickly as possible rehabilitation of the disabled sailor. This goal is attained through the whole-hearted cooperation of the entire staff, under the direction of a far seeing commanding officer and executive officer. The entire program has for its theme the development of a competitive spirit, the spirit to get well.

Treatment of Conditions Affecting the General Nervous System: The Place of Health Resort Therapy

By George B. Fletcher, M.D., Hot Springs National Park, Ark. In J.A.M.A., 125:15: 1039, August 12, 1944.

The term health resort may be applied loosely to any place from a "dude ranch" to a well set up spa where facilities are available for therapeutic baths and physical therapy as well as understanding, intelligent medical care and recreational features.

In one category we think of the three R's Rest, Recreation and Recuperation, and in another we think of means of bringing about relief of pain, improvement in muscle tone and coordination whereby a patient may regain, at least in part, that which has been lost.

Many things may be done with water. We may confine our treatments to underwater or pool baths if these are indicated or, on the other hand, we may go into the other departments where we may receive the tub bath, packs to various parts of the body, sitz baths, salt glows, scotch douches where desired, needle showers, whirlpools, cabinets or massage, and many of these may be combined to bring about results depending on the patient's complaints.

For many years it has been realized that it is easier to perform exercises in water than under normal atmospheric pressure. This is especially striking in the case of treatment of extremities which have been greatly weakened by paralytic or paretic conditions, so this knowledge has led to the application of underwater treatment to the reeducation of disabled or impaired muscles.

The word "pool" has been associated with swimming so long that one may think only in these terms, and we do know that there is a place for supervised swimming along with the other exercises; but unsupervised swimming might cause harm, owing to the fact that the patient may have to learn to swim over again and in doing so find that the old muscles he formerly used are no longer functioning well and there may be a tendency to swim the wrong way just to make progress through the water. That is why swimming should be supervised and the patient be made to swim correctly even though it may be the hard way.

It does not matter so much whether there is a large pool with varying depths of water or a smaller tub arrangement such as the Hubbard tub and its modifications, so long as we have carefully worked out the muscles groups, impaired joints and limitations of motion in order that we may write an intelligent and easily followed set of instructions for the physical therapist who will supervise the treatments.

Poliomyelitis has been in the public mind for years, and the idea prevailed that this disease alone was benefited by underwater therapy; but we have learned that the bulk of our patients will come from those having peripheral nerve injuries, either from disease or from trauma, patients showing poor coordination, those having spasticity, and arthritic patients with contractures and limited motion in joints. By reeducation we bring to the consciousness of the patient what should normally be expected of a group of muscles, and he in turn learns why he cannot perform acts normally and by reasoning begins to try to bring the right muscle or group of muscles into play in a normal manner. This is, of course, where we depend on a well trained physical therapist to see that the patient understands what muscles are defective and how to benefit from the exercises intended to bring about renewed function. One will see a knee joint which cannot be straightened, perhaps because of the patient's having slept with a pillow beneath the knee when the disease was in the acute and painful stage. Then there might be the same condition in an elbow or other joint. Frequently traction may gradually straighten such a joint; but it must be remembered that applying traction on the ordinary bed is not very pleasant to the patient because the body, on account of its weight, literally "hugs" the bed. However, when such traction is applied under water on a special table, the body floats free of the table and the patient, being much more comfortable, will allow more traction to be applied.

Stress has been made on the fact that a physical therapist should be in attendance at all times. At Hot Springs National Park the Department of the Interior will not allow any one to take pool treatments without having been examined by a registered physican and under the care, in the pool, of a graduate physical therapist. Masseurs available in other departments for routine massage are not used in pool treatments except under supervision of the physical therapist.

It is required that the physical therapist make a complete chart of diseased muscles and joints when he first sees the patient after the physician has made his examination and written his directions.

The water temperature of about 90 F. is much less than would be used in the other departments, and some physicians advocate pools of different temperatures for different types of involvement; but it should never be hot enough to bring about exhaustion from the exercises.

Sprained Ankles

John M. Wright, Captain (MC) U.S.N.R., Leon O. Parker, Commander (MC) U.S.N.R. and Thomas R. Lehan, Lieutenant Commander (MC) U.S.N.R. In UNITED STATES NAVAL MEDICAL BULLETIN, 42:6:1313, June 1944.

1. The pathologic changes in sprained ankles are of two types: (a) Complete ligamentous rupture; (b) hematoma with slight ligamentous damage.

2. The differential diagnosis can be made only by very careful physical examination, or by anteroposterior x-ray during manipulation under anesthesia.

3. The best treatment for complete ligamentous rupture is the application of a walking cast for at least 6 weeks. Reconstructive surgery may be required in chronic cases.

4. The essential treatment for the simple sprained ankle without serious ligamentous injury is: (a) Early pressure bandage; (b) limitation of the hematoma and swelling by procaine injection with massage and early use; (c) contrast baths or intermittent traction and massage for persistent swelling and stiffness.

Early Operation for Volkmann's Ischaemic Contracture

G. A. Pollock, M.S., F.R.C.S. Ed., F.A.C.S., D.P.H. Surgeon, Emergency Medical Service. In BRITISH MEDICAL JOURNAL, 4353:783, June 10, 1944.

The recognition and adequate treatment of Volkmann's ischaemic contracture in its early stages will result in a good functional recovery in most cases.

In a recent standard textbook on orthopedic surgery, in a paragraph dealing with the question of operations designed to relieve intrinsic pressure on the vessels in the developing stages of Volkmann's deformity, it is stated that "as a rule damage is already irreparable when the arm is observed, and for this reason the operation is sel-

dom applicable." Too complete an acceptance of this ruling will result in many cases progressing to ischaemic deformity which would otherwise have been prevented had the benefits of early surgery been sought.

Rehabilitation of the War Wounded in the Soviet Union

A. N. Sukhov. In AMERICAN REVIEW OF SOVIET MEDICINE, 1:4:293, April 1944.

The constitution of the U.S.S.R. grants every citizen the inalienable right to security in old age and during illness or disability. Under these provisions the war wounded who cannot be returned to the front are granted pensions not only for themselves but also for their families. The law divides veterans into three categories: 1) totally handicapped persons who require hospitalization; 2) totally handicapped persons who do not require hospitalization; 3) persons rendered unfit for their former occupations but capable of easier work with a shorter working day. Pensions are also graduated to conform with rank. A Medical-Labor Commission consisting of medical specialists and trade union representatives functions in every hospital, reviews and certifies each case.

Induced Resistance to Prolonged Sun Exposure

Lieutenant Commander J. L. Rudd (MC), U. S. N. R. In ARCHIVES OF PHYSICAL THERAPY, 25:6:349, June 1944.

Despite the healthful aspects of the sun's rays, these rays can be annoying and even harmful. Persons exposed to the summer sun of temperate climates, to the tropical sun or to the desert sun may be adversely affected. In altitude flying, on snow-capped mountain peaks and on sandy beaches of lake or sea, the direct or reflected rays of the sun may cause injurious effects. Men in submarines, as well as those below decks on large ships, who have been screened from daylight for long periods at a time, are unable to endure sudden prolonged exposures to the rays of the sun. Among persons with a naturally low cutaneous toleration to sunlight, who are unable to build up a relative immunity to the sun's rays, are redheads, blonds and others with thin, sensitive epidermis.

Summary

Since thickening of the startum corneum occurs with artificial ultraviolet irradiation as well as with solar irradiation, it is postulated that treatments with the hot or cold quartz mercury vapor arc may be useful as a protection against excessive exposure to the rays of the sun.

Such protection is particularly important to the person with light, tender skin or with any other form of sensitivity to solar radiant energy.

If large numbers of service men needed this protection, mass treatments could be given with little cost to the government or loss of time from duty.

More proof is needed, but both the evidence at hand and the practical importance of the subject to the men fighting a global war justifies further investigation.

Rehabilitation of Convalescent Industrial Casualties with Physical Medicine

By Harold D. Storms, B.A., M.D., Toronto. In ARCHIVES OF PHYSICAL THERAPY, 25:8:469, August 1944.

After some years of effort, we now have in operation at the clinic of the Workmen's Compensation Board in Toronto a method of treating industrial casualties with physical medicine based on the following principles:

1. Therapy should not be fixed or inviolate but in a constant state of change, ready to absorb new forms or modifications of old to suit an ever-new set of conditions.

2. Therapy should be aimed not only at an increased range of movement in stiff joints, abolition of pain and reeducation of muscles but also at an increase in muscle power to that needed by the workman when he renews his employment.

3. The injured workman is not a mental patient. He is keen to get back to work, and what is necessary is to build up muscle strength and limber the joints. While there are occasional cases of loss of morale or even of malingering, these are in the minority and are handled by the therapists in their stride.

4. The best form of work therapy is exercise with the tools to which the patient is accustomed, This has a threefold advantage: (1) The patient does not have to learn a new technic. (2) The proper muscle groups are exercised. (3) The patient is able himself to note his progress and to help decide on his fitness for work.

5. There should be a physical therapy and an occupational therapy department, with cooperation between the aides of the two departments.

This cooperation between the aides doing physical therapy and those doing occupational therapy extends throughout the clinic. One sees green uniforms in the physical therapy end and white uniforms in the workshop. The patient appreciates that he has two "nurses" looking after him and that each knows what the other is doing. I have no doubt this has much to do with the satisfactory attitude of the patients. They see friendliness about them, and they are friendly, too. Practically every one who visits the clinic—whether from Canada, from the United States or from one of the countries farther south—comments on the fact that though the patients are kept hard at work they seem happy.

This clinic is proving its economic value. It is difficult, if not impossible, to specify in dollars and cents the money saved by cutting down disability time and ameliorating disabilities, but there is strong evidence that the sum would be in hundreds of thousands. There has been an increase of 480 per cent in the attendance in the twelve years the clinic has been operating. The average time spent by patients in the clinic is twenty-one days. Occasional monthly analyses give fairly consistently the information that: 45 to 50 per cent of patients are completely cured; 25 per cent are improved to the extent that the majority go back to their own work and the remainder to lighter work; 15 to 20 per cent are slightly improved, many of them returning to light work, and 6 to 12 per cent are unimproved. In the last-named group are those who refuse treatment, others who attend for one or two treatments and then disappear and a few who are admitted pending further diagnosis.

An Analysis of Colles' Fracture

S. C. Rogers, B.S., M.R.C.S. Late Casualty House-surgeon, St. Mary's Hospital, Paddington. In BRITISH MEDICAL JOURNAL, No. 4354:809, June 17, 1944.

Reduction is checked radiographically, and graduated and vigorous active exercises to fingers, elbow and shoulder are started immediately under supervision. A high sling is worn for three or four days. The plaster is removed after five weeks and the exercises are intensified. The patient usually returns to light clerical work after one week (in plaster), to light manual work after seven weeks, and to heavy work after about nine weeks. He is discharged when his range of movement is approaching that of the normal side and he has been doing his usual work without complaint for at least a week.

Herniation of Muscles of the Lower Leg

Major Lewis N. Cozen, M.C., A.U.S. In U. S. ARMY MED. BULL., June 1944.

Although it has been stated that muscle herniae are rare, the writer has seen 31 patients with herniae of muscles of the lower leg, "sprinter's hernia," within a period of one year.

In several individuals the diagnosis of varicose veins had been made erroneously. It was not found necessary to aspirate the small tumor in any instance to disprove the diagnosis of varicosities. In each patient the diagnosis was made by elicitation of the following: A small tumor varying in size from ½ by ½ centimeter to 4 by 4 centimeters was present on the anteriolateral aspect of the lower leg in its middle or lower third. The mass was soft, fixed and would enlarge on voluntary motion of the ankle and toes. In all but 6 of the patients pain was experienced at the site of herniation after marching. The herniation produced no symptoms whatsoever in 6 patients. The tibialis anticus was involved in all but 4 cases. The peroneal muscles were herniated three times and extensor digitorum longus protruded in one. Herniation was present bilaterally in 6 patients.

Treatment of 14 patients who complained most bitterly of pain was operative. In the first case to be operated closure of the fascial defect at the site of the muscle hernia was attempted but was unsuccessful.

In the remaining 13 patients a new procedure was performed. The hole in the fascia instead of being closed was simply enlarged so that the muscle would bulge through as a large mass instead of crowding through the original small opening. A cruciate incision of the fascia at the hernial site was therefore made. In every case operated, a defect of the crurual fascia was present. The fascia at the edges of the defect was found to be thinned and dehiscent. The hernia disappeared in all cases operated on using the method described.

Fluorescence Test for Real and Apparent Death in Warfare

By Jack De Ment, Portland, Oregon. In ARCHIVES OF PHYSICAL THERAPY, 25:8:472, August 1944.

It has long been a problem in emergency medical work to determine quickly, simply and reliably whether or not a person is actually dead. This problem is most often encountered on the battlefield, especially in the sorting of many bodies which have been subject to shell fire and bombing and in which the result may be such as to simulate death very closely. The distinction between real and apparent death has a number of significant implications for fields outside that of warfare. In the laboratory it is especially desirable at times to establish objectively the time of death in an experimental animal. In peacetime the problem has numerous variants: in determining the viability of an apparently stillborn child; in determining whether or not the use of artificial respiration, the pulmotor or other means of resuscitation should be continued or ceased, and in the case of asphyxiation, poisoning, shock, psychosis, convulsions and many other conditions which are known to induce a death-like state.

The Uranin Test

Technic—A 10 per cent uranin solution in distilled water was prepared. This was autoclaved for fifteen minutes and a sample checked for sterility and toxicity by inoculation into a dog. In human beings, 3 to 5 cc. was injected into the arm with a 5 cc. syringe and No. 21 or 24 gage needle. In experimental animals, one-third to one-half this quantity of solution was employed.

Method of Observation—After intravenous injection of uranin solution into the arm of a living person a portion of the dye appears within about twelve to eighteen seconds in the eye, but more manifestly in the lips and tissue of the buccal cavity. If a source of filtered short wavelength (2,537 angstrom units) ultraviolet light is directed toward the lips, in darkness, a strong, deep green fluorescence is observed, with a similar effect appearing at about the same time in the eye.

A special type of ultraviolet lamp must be used for making the observations: either the low or the high pressure mercury arc with a quartz envelope and a filter with suitable transmission in the shorter wavelength regions will prove satisfactory. In the present studies a model 421A Mineralight, outfitted with a Corning glass filter No. 986, 2 mm. thick, was employed. It appears that the quality of light generated by such a radiation source is able to penetrate the surface of the tissue more effectively. This is not particularly true of the long wavelength type lamp, for several light sources have been tested and unsatisfactory results were always obtained if the wavelength was not properly chosen.

Injections of uranin and inspection of the lips and eyes with the ultraviolet lamp have shown that in a dead human being, dog, cat or rabbit, green fluorescence is not observed. For example, large amounts of the dyestuff, up to five times the quantity usually used for the test, were injected into the deep tissue of the neck of cats and dogs electrocuted or asphyxiated with carbon monoxide. Animals which had been dead for a half an hour did not respond, nor did those which had been dead for longer periods. Like results were obtained on human cadavers.

The Evil Sequelae of Complete Bed Rest

By William Dock, M.D., Los Angeles, Calif. In J.A.M.A., 125:16:1083, Aug. 19, 1944.

It might be profitable to review the therapeutic measures necessary to minimize the hazards of complete bed rest. Obviously these will include omission or rigid restriction of narcotics and sedatives, encouragement of deep breathing exercises, frequent changes of posture and acceleration of venous flow in the legs by elevating the foot of the bed and not the patient's thorax, or by exercise or reactive hyperemia from brief arterial compression. There is no doubt that precautions based on an understanding of phlebothrombosis, pulmonary embolism and infarction will greatly reduce the evil sequelae of complete bed rest in those cases in which it seems necessary in spite of its hazards. But this still leaves the inevitable residue of tragic cases in which bed rest is the chief agent of disaster. The physician must always consider complete bed rest as a highly unphysiologic and definitely hazardous form of therapy, to be ordered only for specific indications and discontinued as early as possible.

Reconditioning Problem at Oliver General Hospital

Lt. Col. S. E. Bilik, M.C., U.S.A. In U. S. ARMY MED. BULL., July 1944.

Rehabilitation is the use of physical therapy, occupational therapy, recreational therapy and physical training to promote and hasten recovery from illness or injury. Rehabilitation must be considered a phase of therapeutics to be dispensed under the guidance of the patient's physician. Vocational rehabilitation will shortly assume prime importance in the task of restoring war casualties to economic usefulness.

Reconditioning comprises physical and educational training aimed at the attainment of excellent physical and mental condition.

Book Reviews

Electronics: Today and Tomorrow. *By John Mills, sometime member Technical Staff Bell Telephone Laboratories. Cloth. Price, $2.25. Pp. 178, with illustrations. New York: D. Van Nostrand Company, Inc., 1944.*

This is a popular treatise to acquaint the layman with some of the fundamental principles of electronics. The book is divided into three sections: electrons; electron tubes and electronic devices.

The material presented is scientifically accurate and is given in such a style that one does not need to be a physicist to understand it. No irrelevant material is presented nor does the author confuse one with any mathematical formula either simple or advanced. A book of this type should appeal to anyone who has had no training in physics or electricity but is desirous of knowing something about the new field of electronics which is advancing in every field of human activity. The use of such devices in medicine should make a book of this nature a must for the library of both technician and physician.

Principles and Practice of Rehabilitation. *By John Eisele Davis, M.A., Sc.D., Veterans Administration Facility, Perry Point, Md. Cloth. Price, $3. Pp. 211. New York: A. S. Barnes and Company, 1943.*

This book is written by a man who obviously has had considerable experience in institutional work apparently with veterans from the last war. It is a compact volume in which a general survey is made of the approach to the institutionalized patient. The author attempts to impress upon the reader the importance of "total push" in therapy including the various aspects—psychiatric, psychologic, recreational, occupational. He stresses the fact that the approach must be essentially individual so that treatment will be directed with specific aims in mind.

The first part of the book deals with the psychiatric approach. It is the weakest part of the book because there is a very condensed and somewhat confusing account of various schools of psychiatry. Equally unclear are some of the descriptions of the clinical entities. The latter parts of the book, dealing with the author's own field of institutional play and occupational therapy, are well done. In general the language of the book is quite technical and requires considerable effort to understand the author's meaning.

It is difficult to understand why the title of the book includes the word "rehabilitation." As one ordinarily understands rehabilitation, it relates to re-integration of the individual into society. This book deals only with therapy of the psychotic patient within the institution. In spite of its defects the book presents valuable material to workers in fields allied to psychiatry.

Hope and Courage: That is Warm Springs. *By Harold A. Littledale. Paper. Pp. 12.*

This is a paper covered pamphlet reprinted from the "New York Times Magazine" of January 23, 1944, that can be secured from the Warm Springs Foundation, Warm Springs, Ga.

Apparatus Accepted by the Council on Physical Therapy of the American Medical Association, 1944.

In this free booklet are listed and described the devices accepted by the Council on Physical Therapy. It is published each year by the American Medical Association.

Synopsis of Diseases of the Heart and Arteries. *By George R. Herrmann, M.S., M.D., Ph.D., F.A.C.P., Professor of Medicine, University of Texas, Director of the Cardiovascular Service, John Sealy Hospital, Consultant in Vascular Diseases, U. S. Marine Hospital. Third Edition. Cloth. Price, $5. Pp. 516, with 107 illustrations. St. Louis: The C. V. Mosby Company, 1944.*

This is an outline of the most generally accepted facts on diseases of the heart and arteries developed and arranged in a simple pedagogical way. Beginning with fundamental scientific methods, etiologic, anatomic and physiologic data are built into clinical pictures with therapy at the apex. Emphasis is placed on the essentials in the diagnosis and treatment of cardiovascular diseases.

In this edition corrections have been made in the text, and it has been brought up to date. Old material has been condensed and removed, and new material from war literature, on such subjects as immersion foot, has been added. Making certain topics more accessible for quick reference, the author has made four new chapters: "Nervous Disorders with Cardiac Manifestations," "Blood Pressure Abnormalities," "Essential Hypertension" and "General Systemic Types of Heart Disease."

Medical undergraduates, hard pressed for time in a crowded curriculum, and the physician harassed in caring for a general practice will find this book of great value.

The American Illustrated Medical Dictionary. *By W. A. Newman Dorland, A.M., M.D., F.A.C.S. Twentieth edition. Cloth. Price, $7. Pp. 1668, with 885 illustrations. Philadelphia: W. B. Saunders Company, 1944.*

This is a new edition of a most popular dictionary. In it 2500 new words are added; the terminology conforms to standards of the American Medical Association and other scientific bodies; the definitions and pronunciations are fully stated; many historical aspects are given; arteries, veins, muscles and nerves are pictured in colors in the anatomic tables; abbreviations are clearly explained; the portraits of the great physicians of the past are given, and the medical biographies are worthwhile sources of useful information.

This is a medical dictionary that should be in the library of every physical therapist.

Stuttering: Significant Theories and Therapies. *By Eugene F. Hahn. Foreword by Sara Stinchfield Hawk. Cloth. Price, $2. Pp. 177. Stanford University: Stanford University Press; London: Oxford University Press, 1943.*

This little book is a useful compendium of all the better known theories of stuttering. The author has obtained an "official" version of each contributor's conception of the causes and treatment of this disability. There has been no attempt at bringing together these concepts undoubtedly because it would yield a beautiful conglomeration. Each contribution is quite concise. There is an appendix which describes the procedures in a clinic for stutterers. A valuable part of the book is an ample bibliography for further reading.

The book can be highly recommended for anyone interested in speech problems. No fault of the authors is the fact that the reader carries away the impression that any approach to the problem is just as good and valid as is anyone else's approach.

Textbook of Anatomy and Physiology. *By Catherine Parker Anthony, B.A., R.N., Instructor of Anatomy and Physiology, Lutheran Hospital, Cleveland, Ohio; formerly Instructor of Anatomy and Physiology, St. Luke's Hospital, and Assistant Instructor of Anatomy and Physiology, Frances Payne Bolton School of Nursing, Western Reserve University. Cloth. Price, $3.50. Pp. 400, with 153 illustrations. St. Louis: The C. V. Mosby Company, 1944.*

This book presents only the main facts of anatomy and physiology and the most relevant correlations with nursing in the correct belief of the author that too little is learned when too much is taught. The main facts which the student should remember are summarized in outline form at the end of each chapter, as well as a complete list of review questions which furnish a means by which the student can test herself to make sure that she has learned the facts which the text is designed to teach.

Diagrams and illustrations are given to illustrate points of particular interest, and where facts are more easily understood from illustrations than from descriptions.

Other features of teaching value in this book are: brief topical outlines and vocabularies preceding each chapter; a list of interest-arousing questions; numerous, concise, simplified tables, and study hints.

This can be recommended to nurses and nursing schools as an excellent textbook of anatomy and physiology.

Rose's Foundations of Nutrition. *Revised by Grace MacLeod, Ph.D., Professor of Nutrition, and Clara Mae Taylor, Ph.D., Associate Professor of Nutrition, Teachers College, Columbia University, New York. Fourth edition. Cloth. Price, $3.75. Pp. 594, with 122 illustrations. New York: The Macmillan Company, 1944.*

This excellent book on the foundations of nutrition needs no introduction. The responsibility of revising Mrs. Rose's text fell into most capable hands, for Doctors MacLeod and Taylor have made a valuable contribution.

It is difficult to keep pace with progress in the field of vitamin research, and these authors have found it necessary to make considerable change in the text. The chapters on dietary planning have been completely rewritten. Several new tables which were developed for teaching purposes have been added to the very valuable appendix. The subject matter is written in simple and concise language. The illustrations are extremely well done and add very materially to an understanding of the text. While this book has been written primarily for a classroom text it can readily be used by anyone at all interested in the subject of nutrition, a subject which is of vital importance to the health and welfare of the nation. This book should be in the library of everyone interested in the subject of health.

Occupational Therapy in the Treatment of the Tuberculous Patient. *By Holland Hudson, Director, Rehabilitation Service, National Tuberculosis Association, and Marjorie Fish, O.T.R., Director of Professional Courses in Occupational Therapy, Columbia University. Cloth. Price, $3. Pp. 317. New York: National Tuberculosis Association, 1944.*

This book gives a wide general preview of tuberculous treatment and of the role of occupational therapy in that treatment. Considerable space is given to the usual difficulties encountered in that treatment. The authors correctly state: "This text is intended to facilitate and extend the physician's control and direction of occupational therapy in the treatment of tuberculosis." The authors consistently turn to him as the final authority in all matters relating to treatment.

This book provides administrators and internists with a sampling from the many applications which have been made of occupational therapy in the treatment of tuberculosis. "The student should not expect to find, in any single institution, more than a part of the total program suggested in these pages. Nor should any administrator expect any one therapist or therapy department to apply simultaneously all of the technics discussed."

While this is recommended as a text for students of occupational therapy, it will be of interest to administrators and internists interested in the treatment of tuberculosis.

A Handbook of Psychiatry. *By P. M. Lichtenstein, M.D., LL.B., in Charge of Psychiatry and Legal Medicine for the District Attorney, County of New York, and S. M. Small, B.S., M.D., Psychiatrist and Assistant Medical Director, National Hospital for Speech Disorders, New York. Cloth. Price, $3.50. Pp. 330. New York: W. W. Norton and Company, Inc., 1943.*

This small volume gives a very rapid survey of the field of psychiatry as it is understood today. It adheres to the well accepted formal outline of psychiatric classification. There are chapters discussing the various aspects of the subject, such as mental examination, psychometric tests, intellectual deficiency, psychopathic personality, psychoneuroses, war psychoneuroses and psychoses. There is a good chapter on general principles of psychiatric therapy.

Although the book presents nothing new in psychiatry it has many accomplishments. It is simply, concisely and well written. It is very much up-to-date. The orientation is constantly towards therapy and the discussions on the therapy of the psychoneuroses is laudable even though it is brief. The authors present a valuable bibliography of recent literature in each section which is a worthy departure from the rigidity of many other textbooks of its kind.

The book can be well recommended to the average novice in psychiatry, whether he be a medical student, general practitioner or connected with some allied branch of psychiatry.

Stop Worrying and Get Well. *By Edward Podolsky, M.D., New edition (of Worry and Disease). Cloth. Price, $2. Pp. 124. New York: Bernard Ackerman, Inc., 1944.*

The subtle relationship between the body and the mental functions has assumed increasing importance in medical treatment and many physicians have ceased to draw a sharp line between "functional" and "organic" disease.

The author presents to the general reader the results of these new discoveries. He shows that the cause of such diseases as skin eruptions, high blood pressure, rheumatism, angina pectoris, stomach conditions, overactive thyroid, blindness and hysterical paralysis often are in the mind, and in a healthy mental approach to the problem lies the cure.

Podolsky presents a constructive anti-worry program. He shows how to meet daily problems in a sound way, without putting an undue strain on the mind and the nervous system.

Worry is an unpleasant, harmful habit, but being a habit it can be controlled. This book should be read by everyone who worries.

A Manual of Physical Therapy. *By Richard Kovacs, Professor of Physical Therapy, New York Polyclinic Medical School and Hospital; Attending Physical Therapist Manhattan State, Harlem Valley State, Columbus and West Side Hospitals; Visiting Physical Therapist, New York City Department of Correction Hospitals; Consulting Physical Therapist New York Infirmary for Women and Children; Mary Immaculate Hospital, Jamaica, New York; St. Charles Hospital, Jefferson, L. I., New York; Hackensack Hospital, Hackensack, New Jersey. Cloth. Price, $3.25. Pp. 309, with 118 illustrations. Philadelphia: Lea & Febiger, 1944.*

This book was published for two editions under the title of "Physical Therapy for Nurses." Kovacs has been long known in the field of physical therapy. He has edited for some years the "Year Book of Physical Therapy" and is the author of a large textbook on "Electrotherapy and Light Therapy."

This book is a concise manual on physical therapy for medical personnel seeking information on the essential facts about physical therapy methods. The author discusses physical forces in treatment and makes a point that it is by no means necessary to possess a large array of machinery to produce the few basic physical and physiological effects but modern progress offers many types of efficient apparatus with the saving expenditure of one's own body energy and of time in accomplishing results. Also there are discussions on the history of physical therapy; heat and light; electricity; water; massage; physical therapy in institutional practice, and in war. Dr. Madge C. L. McGuiness writes an excellent chapter on exercise.

This manual can be highly recommended to general practitioners and nurses, because it is brief and well organized.

Clinical Evaluation of the Rehabilitation of the Tuberculous: Experience at Altro Work Shops 1915-1939. *By Louis E. Siltzbach, M.D., Chest Physician, Committee for the Care of the Jewish Tuberculous, Inc., Associate Attending Physician, Division of Pulmonary Diseases, Montefiore Hospital. Price: paper, 50c; cloth, $1. Pp. 70. Copies available only through state tuberculosis associations. National Tuberculosis Association, 1944.*

The establishment of a thorough-going rehabilitation program with general application to the post-sanatorium tuberculous population will be one of the important post-war public health tasks in the field of tuberculosis. At the present time the rehabilitation of the tuberculous faces two major problems: First, there is the immediate problem of contributing to the manning of the wartime industries. This book proves that the successfully treated part-time and full-time expatient can be integrated into industry with great benefit to the nation and to the worker himself. A risk is present, but if workers are chosen on a sound medical basis and are properly supervised, the risk is not great and is worth taking. Second, plans must be made for the future tuberculous service men.

Nine hundred and sixty-four expatients with pulmonary tuberculosis were followed in this study. At the end of five years following discharge from the workshop, 97.8 per cent of the "graduates" survived. Recurrences of tuberculosis were experienced by 13.8 per cent of these workers during the first five years following Altro discharge. Approximately 80 per cent of the "graduates" were working or able to work full-time on the fifth anniversary of their discharge from the workshop, while 85 per cent were working or able to work on the tenth anniversary.

Technic of Electrotherapy and Its Physical and Physiological Basis. *By Stafford L. Osborne, M. S., Ph.D., Assistant Professor, Department of Physical Therapy, Northwestern University Medical School, and Harold J. Holmquest, B.S., B.S. (M.E.), Lecturer in Applied Physics, Department of Physical Therapy, Northwestern University Medical School, Chicago. Cloth. Price, $7.50. Pp. 780, with 240 illustrations. Springfield, Ill.: Charles C Thomas, 1944.*

This is a book on electrotherapy which gives a discussion of the basic physics and physiology of the subject, combined with a clear outline of the proper technic of applications. The subject matter is essentially that which has been taught for the past sixteen years in the courses of electrotherapy and physics given to physical therapists at Northwestern University Medical School.

Part one is on the direct current, discussing general considerations and the technic of application; part two is on muscle stimulation by electric currents; section one on general considerations, section two on types of apparatus in use, and section three on the technic of application; part three on radiation, considering thermogenic and ultraviolet radiation; and the fourth part on high frequency currents, discussing elementary alternating current circuit theory, alternating currents of high frequency, the technic of local application, the thermal, electrical and biologic effects of high frequency fields, the technic of general application (artificial fever) and the physiology of artificial fever by physical means.

This book presents the subject for two groups of students; first, those who are well grounded in science for whom the more advanced work in physics and mathematics appears in the form of footnotes, and second, those students whose training in sciences is limited and hence who might find the subject matter in the footnotes difficult to follow. Such students may omit the footnotes without destroying the continuity or clarity of the text.

A feature of the book that renders it available for a textbook is that instructive, elementary laboratory experiments, requiring a minimum of simple apparatus, are given. This book is highly recommended as a textbook in schools for physical therapists.

Physical Medicine in General Practice. *By William Bierman, M.D., Attending Physical Therapist, Mount Sinai Hospital; Assistant Clinical Professor of Therapeutics, New York University Medical College, New York. Cloth. Price, $7.50. Pp. 653, with 310 illustrations. New York: Paul B. Hoeber, Inc., 1944.*

The author states that physical medicine and physical therapy are synonymous terms, the former being the more modern terminology which was introduced in England. Bierman gives excellent chapters on heat and cold; hydrotherapy; climatotherapy and spa therapy; visible and infra-red radiation; diathermy; the short wave current; fever therapy; surgical diathermy; galvanic current; ultraviolet radiation; massage; exercise and occupational therapy.

Special dangers are indicated in these various chapters because Bierman believes that physical medicine has its limitations and it also has the potentiality for doing harm. The chapter on "Conduct of Treatments" contains references to pitfalls which should be avoided.

The remainder of the twenty-three chapters are devoted to the use of physical agents in special fields of medicine.

This book is written by a leader in the field of physical medicine and it tells the practitioner in general and special fields of medicine how to use physical measures with the others he employs in his efforts to be of the greatest service to his patient. It is highly recommended.

The Curriculum in Health and Physical Education. *By Leslie W. Irwin, Ph.D., Director of Health and Physical Education, The Laboratory Schools, the University of Chicago. Cloth. Price, $3.50. Pp. 391. St. Louis: The C. V. Mosby Company, 1944.*

The curriculum in health and physical education presented in this book is the result of many years of study and experimentation with activities at the elementary, junior high and senior high school levels. Doctor Irwin directed programs in health and physical education in the public schools for many years. During this time the numerous and usual perplexing curricular problems became increasingly evident. He recognized the need of long-term experimentation and study of curriculum activities. Therefore, this book was written after more than twelve years of experimentation with activities in a laboratory school. A generation of children entering the kindergarten in the laboratory school has participated in the physical education programs under controlled and careful study throughout the elementary, junior high and senior high school grades. The results of study and experimentation with these groups are embodied in this book.

A good example of this study is shown in some of the remarks of the author on body mechanics. "One of the most inconsistent practices in relation to the so-called normal student has been that of trying to correct posture for a large percentage of the students within a school." "It has been found that the exacting upright position which we have been lead to believe is the correct posture may not be the correct posture for every individual." "Large numbers of the students needing postural corrections who have been placed in special classes in schools rightfully need the attention of orthopedic specialists and should not be handled in the ordinary school program of correction."

School administrators, students and teachers in the field of health and physical education should read this book.

Nature and Treatment of Mental Disorders. *By Thomas Verner Moore. Cloth. Price, $4. Pp. 312, with illustrations. New York: Grune and Stratton, 1943.*

This does not pretend to be a comprehensive text in psychiatry but is the presentation of the author's experience in the teaching and practice of psychiatry. Doctor Moore is the professor of psychology and psychiatry at the Catholic University of America. His position has given him the need to develop a compromise between religion and psychiatry, which he does very well.

In Part I on psychopathology he discusses the various theories of modern psychodynamics and makes rather pertinent criticisms of the rigid schools of thought. His own eclectic interpretations make one feel psychiatry is not such a mystery as some pretend it to be. The second and third parts of the book deal with therapy. The chapters are well illustrated and the various therapies clearly presented. Part four discusses organic emotional disorders from a physiologic point of view. An appendix on the classification and definition of the clinical entities which is reprinted from the "Statistical Manual for the Use of Hospitals for Mental Diseases," (Utica, N. Y., 1942) is a worthwhile addition to the book in that it reminds us of accepted terminology.

The book is well written and ample credit is given for whatever is accepted from the literature. It avoids the stilted presentation of psychiatric entities and teaches one to approach a patient in a logical fashion. The book is recommended to physicians interested in or practicing psychiatry, but is too controversial for anyone without psychiatric knowledge.

Radiation and Climatic Therapy of Chronic Pulmonary Diseases, Including all Forms of Tuberculosis. *Edited by Edgar Mayer, M.D., F.A.C.P., F.A.C.C.P., Assistant Professor of Clinical Medicine, Cornell University Medical College; Attending Physician, New York and Memorial Hospitals; Special Pulmonary Consultant, New York State Department of Labor; Formerly Member Faculty, Trudeau School for Tuberculosis; Director (ex urbe) Northwoods and Will Rogers Tuberculosis Sanatoria, Saranac Lake, New York; Consultant on Tuberculosis to the Government of Cuba; Board Member of the Finlay Institute of America. With the collaboration of 22 contributors. Cloth. Price, $5. Pp. 393, with 46 illustrations. Baltimore: Williams and Wilkins Company, 1944.*

This is a well written and authoritative treatise on the use of radiation in the treatment of chronic pulmonary diseases and all forms of tuberculosis. Doctor Mayer feels that far too often the physician treating pulmonary diseases disregards the possibilities inherent in light and x-ray irradiation in the management of selected patients. The utilization of these adjuvant measures, states the author, in proper dosage and in properly selected cases, often has turned the tide in favor of the patient, ultimately favoring healing, alleviation of pain, prolongation of life and even eventual cure. There are many patients throughout the county who could be aided by this form of therapy.

The book is divided into sections. The first section deals with the physics of light radiation, the physiologic action of light and sources of light. Each of these chapters is written by outstanding specialists in these fields. The next section deals with artificial light therapy and some of the more important chapters of this section are: tuberculosis, pulmonary and pleural forms; laryngeal and tracheobronchial tuberculosis; intestinal and peritoneal tuberculosis; and tuberculosis of the lymph-nodes. The third section discusses solar radiation and climatotherapy. Section four deals with x-ray therapy, and the final section with a discussion of surgical versus conservative therapy.

The work is well presented and is written to stimulate not only the specialists but the general practitioner as well. The physics of light is told in simple understandable language. This book should find a warm welcome among all general practitioners of medicine. Anyone interested in ultraviolet therapy also will find this book a valuable aid.

The Role of Nutritional Deficiency in Nervous and Mental Disease. *Editorial Board: Stanley Cobb, M.D., Chairman, Edward F. Gildea, M.D., and Harry M. Zimmermann, M.D., Research Publications, Association for Research in Nervous and Mental Disease, Volume XXII. Cloth. Price, $4. Pp. 215, with 23 illustrations. Baltimore: The Williams and Wilkins Company, 1943.*

This volume of the research publications of the Association for Research in Nervous and Mental Disease is a compilation of the papers presented at the proceedings of the Association on December 19 and 20, 1941. There are sixteen papers by well known authorities in the fields of nutrition and nervous and mental diseases. Most of the articles deal with vitamin deficiencies in relation to diseases of the nervous system. It would be impossible to review all of these articles, and it is needless since they all are well-documented scientific presentations. This volume should make us realize that the days of "shot-gun" vitamin therapy are gone. Every practicing neuropsychiatrist should study it carefully.

Hypertension and Hypertensive Disease. *By William Goldring, M.D., Associate Professor of Medicine, New York University College of Medicine; Chief, Nephritis and Hypertension Clinic, New York University Clinic; Physician to the Adult Cardiac Clinic and Associate Visiting Physician, Third (New York University) Medical Division, Bellevue Hospital; Visiting Physician, Goldwater Memorial Hospital, and Herbert Chasis, M.D., Assistant Professor of Medicine, New York University College of Medicine; Associate Chief, Nephritis and Hypertension Clinic, New York University Clinic; Physician to the Adult Heart Clinic and Assistant Visiting Physician, Third (New York University) Medical Division, Bellevue Hospital; Cardiologist to the French Hospital. Cloth. Price, $3.50. Pp. 253. New York: The Commonwealth Fund, 1944.*

The authors, during the last fifteen years, have studied the course of hypertensive disease in some 6,000 patients while they were ambulatory and during periods of hospitalization. Their discussion of treatment is concerned with current so-called specific medical and surgical therapy for hypertension as well as with a regime for symptomatic management.

The authors report, in full detail, procedures and interpretation of their pioneer investigations concerning methods of quantitative measurement of the rate of glomerular filtration, renal blood flow and tubular function in man. New technics are given for the study of this disease in man, developed by the authors and their associates in the Department of Medicine.

Physical therapists will be interested in the authors' comments on exercise: "Patients with uncomplicated hypertension tolerate ordinary exercise well; however, they should not exceed their tolerance and should be advised to avoid vigorous and competitive sports. For those who lead a sedentary life, mild exercise compatible with the patient's tolerance should be encouraged."

Again the authors state, under neurological complication as cerebral hemorrhage or thrombosis: "When some degree of motion has returned, the patient should be transferred to a wheel chair for intervals during the day and, when feasible, he should be encouraged to stand or walk with the required amount of support; in the majority of instances this degree of progress is achieved within two or three weeks from the onset. Passive movements should be started early and active movements as soon as feasible. Daily brisk massage is beneficial; electrotherapy is of doubtful value and may discourage the patient from attempting the more beneficial voluntary movements. Treatment in the subsequent period is essentially a matter of reeducation; the patient should be encouraged to walk since in most instances there is sufficient return of function in the leg. . . . The period of reeducation is long, in most instances requiring a year or more of patient effort."

This book is of interest to all physicians.

Medicine and the War. *Edited by William H. Taliaferro. Cloth. Price, $2. Pp. 193. Chicago: The University of Chicago Press, 1944.*

This book gives a few timely high lights on the important and amazing role that the art and science of medicine has assumed in modern warfare. The authors are members of the University of Chicago Division of Biological Sciences. Arno B. Luckhardt, Professor of Physiology, gives an historical review to place war medicine in its proper perspective; P. R. Cannon, Professor of Pathology, shows that food is the basic fuel for the human part of the war machine; E. M. K. Geiling, Professor of Pharmacology, discusses chemotherapy as the wonder science of modern medicine and shows that the sulpha drugs were given to the present war just in time. According to W. H. Taliaferro, Professor of Parasitiology, malaria is the most important infectious disease in the present war, and C. G. Huff, Professor of Parasitiology, presents the fact that modern transportation is affording an unwanted aid to the dissemination of diseases and disease carrying insects. A. Brunschwig, Professor of Surgery and Roentgenology, writes on shock and blood substitutes; H. T. Ricketts, Associate Professor of Medicine, writes on aviation medicine; the neurological and psychological effects of cerebral injuries are a chapter subject of A. E. Walker, Associate Professor of Neurosurgery and W. C. Halstead, Assistant Professor of Experimental Psychology. D. Slight, Professor of Psychiatry, points out that psychiatric disorders which first came into prominence during World War I are the most alarming features of modern wars. F. C. McLean, Professor of Pathological Physiology, shows that chemical warfare holds a place by itself and is particularly abhorrent to most civilians.

These lectures should be read by the medical profession as they point out the ramifications of medicine in war, some of the unsolved problems and indicate the importance of scientific research in developing more and better methods of preserving the human resources used in war.

Healthful Living for Nurses. *By Harold S. Diehl, M.S., M.D., Sc.D., Professor of Preventive Medicine and Public Health and Dean of the Medical Sciences, University of Minnesota, Minneapolis, and Ruth E. Boynton, M.S., M.D., Professor of Preventive Medicine and Public Health and Director of the Students' Health Service, University of Minnesota. Cloth. Price, $2.50. Pp. 534, with 34 illustrations. New York and London: McGraw-Hill Book Company, Inc., 1944.*

Nurses, more than any other group of students, need at the very beginning of their professional training to be thoroughly familiar with the measures essential for the maintenance of individual and group health. Basic health principles are no different for nurses than for physicians or laymen; hence, much of the subject matter of Doctor Diehl's widely known and successful "Textbook of Healthful Living." This material has been completely revised to cover recent advances in all fields. The latest knowledge in the field of nutrition has been presented with its application to the special problems of diet and nutrition in the nursing profession.

Every nurse should have this book of timely importance covering the essential information on personal and community health.

Baby Doctor. *By Isaac A. Abt, M.D. Cloth. Price, $2.50. Pp. 310, with portrait. New York & London: Whittlesey House, McGraw-Hill Book Company, Inc., 1944.*

This is the autobiography of a pioneer in the field of pediatrics. Doctor Abt's life has coincided with the history of modern pediatrics and he has contributed materially to its development. "The Baby Doctor" tells the layman the story of child care.

Abt is a student, scientist, physician and teacher. Loved and revered for his kindness, his modesty and his unfailing sense of humor, this book will be read with interest by the thousands who know the author.

The story contains many anecdotes, and is pleasantly written but with power. It should be read by every mother so she can appreciate how child care has developed in fifty years. It is recommended to everyone interested in child care.

Discovering Ourselves: A View of the Human Mind and How It Works. *By Edward A. Strecker, A.M., M.D., and Kenneth E. Appel, Ph.D., M.D. In collaboration with John W. Appel, M.D. Second edition. Cloth. Price, $3. Pp. 434, with 28 illustrations. New York: The Macmillan Company, 1943.*

This second edition of "Discovering Ourselves" is another attempt to bring psychiatry and mental hygiene in fairly simple language to the nontechnically trained intelligent adult. In the book is described something of the meaning of nervousness and the concept of psychosomatic medicine. It gives the reader some insight into the emotional production of physical symptoms. Subsequently there are several chapters on dynamic concepts and a discussion of the "inevitable clash existing between the Ego, Sex and Herd Complexes." There are three clearly written chapters on emotion, anger and fear which give one a good picture of the struggle of man in society. Part II of the book deals with "mental mechanisms or typical ways in which the human personality meets conflicting urges and difficulties in everyday life." Here the authors become rather technical and describe such entities as regression, extroversion and introversion, repression, symbolism, transference and so on.

Although one must commend the authors producing a readable and scientifically correct book, one always wonders what terrific hazards exist in such a book for those patients who read the book introspectively. Other than this the book may be highly recommended for any person who wants to know more about personality structure and its means of coping with the world.

Fundamentals of Internal Medicine. *By Wallace M. Yater, M.D., F.A.C.P., Professor of Medicine and Director of the Department of Medicine, Georgetown University School of Medicine, Physician-in-Chief, Georgetown University Hospital and Gallinger Municipal Hospital, Washington, D. C. Second Edition. Cloth. Price, $10. Pp. 1204, with 274 illustrations. New York: D. Appleton-Century Company, 1944.*

The basic facts of internal medicine are presented in this book in a simple understandable manner. Most theories and therapeutic methods of questionable value have been omitted. Physiologic and pathologic considerations have been summarized in order that clinical features might be better understood. Lists of recommended texts are given at the end of each section.

In this second edition the author has added subjects of interest to the internist in the Armed Forces, such as medical problems incident to flying, immersion foot, blast injuries, effects of chemical warfare, industrial pursuits affecting the lungs, war neuroses and tropical medicine. Many other subjects have been added or revised. Three new sections have been written: "Symptomatic and Supportive Treatment," "Clinical Values and Useful Tables," and "The Physician Himself." There is a much more comprehensive index, and additional illustrations have been inserted.

This concise yet complete coverage of the fundamentals of internal medicine is recommended to medical students, interns, residents and general practitioners because it gives the very latest accepted methods of diagnosis and treatment; it uses bold face type to stress material of particular importance; time-saving and error-eliminating diagnostic tables are liberally used; it gives a summarization of physiologic and pathologic considerations for clearer understanding of clinical features and there are hundreds of clarifying and descriptive illustrations.

An Introduction to Sociology and Social Problems: A Textbook for Nurses. *By Deborah MacLurg Jensen, R.N., B.Sc., M.A., Instructor in Sociology and Social Problems at Schools of Nursing of St. Louis City Hospital and St. Luke's Hospital, St. Louis. Second edition. Cloth. Price, $3.25. Pp. 420, with 78 illustrations. St. Louis: The C. V. Mosby Company, 1943.*

Sociology is defined by the author as the study of social groups, their structure and functions, and the behavior of individuals in these groups. Jensen says: "The need for nurses to have a basic course in sociology is described as follows: 'In order to adjust well to individual patients, to families and to communities in which they live and work, nurses must know something of the social factors that modify personality. They should understand the American family in its community relationships and the social and economic conditions that directly affect family and community health. They should also be familiar with the institutions and agencies in the community that are primarily concerned with the health and social welfare of individuals and families. The relationships of the nurse herself and of the nursing profession to the hospital as a social institution and to the community as a whole need to be clearly understood, also the ways in which nurses can best serve the various groups in the community.

'The relationships of nurses in their professional organizations and their association with physicians, social workers and other professional groups are based on social principles of cooperation and modes of group action. In order to have a basis for such understanding and for the social adjustments they will need to make, a knowledge of some of the basic concepts of sociology is valuable, if not essential.' "

Physical therapists could apply all the above to themselves and read the above paragraphs substituting the words "physical therapist" for the word "nurse." Surely if nurses need a knowledge of sociology, physical therapists need it also. The author again points this out in her chapter on, "The Physically Defective," when she says that physical handicaps have social implications of a far-reaching nature and cannot be considered for their effects on the individual only.

Much of the content of this book is included in some physical therapy courses under the titles of "Ethics," "Psychology of the Handicapped" and "Social Aspects of the Handicapped." This book contains information on sociology and social problems that should be included in all courses of physical therapy. It is highly recommended as a textbook for nurses on sociology and social problems and should be read by every physical therapist.

The Treatment of Fractures. *By John A. Caldwell, M.D., Professor of Clinical Surgery, College of Medicine, University of Cincinnati; Director of Fracture Service, Cincinnati General Hospital. Cloth. Price, $3.50. Pp. 150, with 76 illustrations. Springfield, Illinois: Charles C Thomas, 1941.*

This manual of the treatment of fractures has been prepared largely to meet the needs of medical students, house officers and general practitioners. It makes clear what leading authorities consider good practice; it points out errors of poor judgment; it helps you to use your eyes, hands and reason; it reduces the use of gadgets and operative technics to a minimum; and it emphasizes well recognized orthopedic principles rather than giving prominence to personalized procedures.

It is recommended as a plain and simple text with good illustrations.

Textbook of General Surgery. *By Warren H. Cole, M.D., F.A.C.S., Professor and Head of the Department of Surgery, University of Illinois College of Medicine; Surgeon, Illinois Research Hospital, Chicago, and Robert Elman, M.D., Associate Professor of Clinical Surgery, Washington University School of Medicine; Assistant Surgeon, Barnes Hospital; Associate Surgeon, St. Louis Children's Hospital; Director of Surgical Service, H. G. Phillips Hospital, St. Louis. Third Edition. Cloth. Price, $10. Pp. 1070, with 558 illustrations. New York: D. Appleton-Century Company, Inc., 1944.*

This book was first published in 1936. This third edition represents a revision of the first as well as the second edition with changes so extensive that it has been necessary completely to reset the book.

Detailed consideration of such specialties as ophthalmology, otology and rhinology are eliminated although many features are included with which the general surgeon must be acquainted. On the other hand separate chapters are assigned to such allied specialties as genito-urinary surgery and gynecology. Certain features of neurosurgery are included, particularly in regard to head injuries.

Apparently because of the influence of the war, particular attention is paid to open wounds, burns, treatment of fractures, particularly compound fractures, amputations, anesthesia, the effectiveness of the sulfonamide compounds, especially in accidental wounds and abdominal operations.

The subject is presented as far as possible from a physiological point of view, so that the principles underlying both the clinical features and particularly treatment will be better understood. Because of the importance of surgical pathology numerous photomicrographs and illustrations of gross specimens along with the case histories of representative neoplastic and other lesions are given throughout the text. The details of nonoperative therapy are fully covered. Operations, although discussed in principle, have not been described in detail except a few of the more common ones.

The authors in this edition have had the aid of seventeen consulting authors, all teachers of surgery—most of them in other schools. The reputation and experience of the authors and the consultants make this an outstanding textbook of general surgery. It is of value not only to undergraduate students but also to general practitioners and surgeons who desire to obtain in a concise manner information about many of the advances which have been made in surgery.

The March of Medicine: The New York Academy of Medicine Lectures to the Laity (Number VIII), 1943. *Cloth. Price, $2. Pp. 151. New York: Columbia University Press, 1943.*

This is a book for thoughtful readers, both physicians and laymen, who enjoy exploring the frontiers of social thought with leaders in medical and allied fields. There are six lectures: "Crime and Punishment," by Bernard Glueck, M.D.; "The Scientific Method and Our Plans for Peace," by Sir Norman Angell, Nobel Peace Prize Winner 1933; "War and Medicine," by Colonel Edgar E. Hume, Medical Corps, U. S. Army; "Aggressiveness—Individual and Collective," by Franz Alexander, M.D.; "Let Babies Be Our Teachers," by Myrtle McGraw, Ph.D.; and "Nature and Man" by Robert S. Williams, Sc.D.

These lectures delivered by distinguished authorities in their fields are of intense and timely interest.

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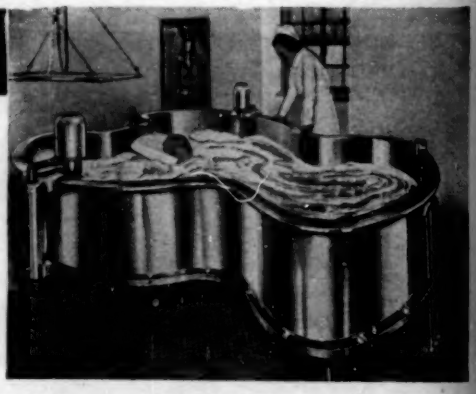

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